NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0073 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** IVD: Blood Pressure Management
De.2 **Brief description of measure***:* The percentage of patients 18 years of age and older who were discharged alive with the following diagnoses: acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA) 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.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Staying healthy

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** Proprietary measure A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Leading cause of morbidity/mortality 1a.2 1a.3 **Summary of Evidence of High Impact:** Coronary Heart Disease (CHD) was an underlying or contributing cause of death for 451,300 people that accounted for 1 of every 5 deaths in the United States in 2004. AMI was as an underlying or contributing cause of death for 156,000 people (AHA, 2008). In addition, the prevalence of CHD for both sexes in 2005 is nearly 16 million people or 7.3% of the American population (AHA, 2008) The cost of cardiovascular diseases and stroke in the United States for 2008 is estimated at $448.5 billion (AHA, 2008). This figure includes health expenditures (direct costs such as the cost of physicians and healthcare practitioners, hospital and nursing home services, medications, home health care and other medical durables) and lost productivity resulting from morbidity and mortality (indirect costs). Acute Myocardial Infarction (AMI) represents 18% of hospital discharges and 28% of deaths due to heart disease (NHLBI, 2000). Research has shown that costs associated with cardiovascular disease for hospitals are easily $156 billion (AHA, 2008). From 1979 to 2003, the percentage of discharges of patients with discharges from short-stay hospitals with CHD as the main diagnosis rose by 31%. Evidence has shown that age is a strong demographic factor for CHD. The average life expectancy has risen after 10 years by about 2 years since 1965, it is projected by 2030, 1 in 5 Americans will be aged 65 or older. The need for CHD management is essential (Berra, 2006).	**1a** C☐ P☐ M☐ N☐

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

Health Importance:
Hypertension is a very significant health issue in the United States. Fifty million or more Americans have high blood pressure that warrants treatment, according to the NHANES survey (JNC-7, 2003). The USPSTF recommends that clinicians screen adults aged 18 and older for high blood pressure (USPSTF, 2007).

The most frequent and serious complications of uncontrolled hypertension include coronary heart disease, congestive heart failure, stroke, ruptured aortic aneurysm, renal disease, and retinopathy. The increased risks of hypertension are present in individuals ranging from 40 to 89 years of age. For every 20 mmHg systolic or 10 mmHg diastolic increase in BP, there is a doubling of mortality from both IHD and stroke (JNC-7, 2003).

Better control of BP has been shown to significantly reduce the probability that these undesirable and costly outcomes will occur. Thus, the relationship between the measure (control of hypertension) and the long-term clinical outcomes listed is well established. In clinical trials, antihypertensive therapy has been associated with reductions in stroke incidence (35-40%), myocardial infarction (20-25%) and heart failure (>50%) (JNC-7, 2003).

The percentage of persons receiving treatment for their hypertension has increased from 31% (1976-1980) to 59% in 1999-2000. Thirty-four percent of persons with hypertension from 1999-2000 have their blood pressure controlled below 140/90 mmHg compared to 10% from 1976-1980. However, the prevalence and hospitalization rates of heart failure have continued to increase. A majority of the people have hypertension prior to developing heart failure (JNC-7, 2003).

The outcomes that are principally affected by controlling blood pressure are morbidity and mortality related to cerebrovascular and cardiovascular events (e.g., stroke, heart failure and myocardial infarction) (JNC-7, 2003).

In patients ages 65 and older with systolic blood pressure greater than 139, it was estimated that if these persons were in active treatment for their hypertension using antihypertensive drugs alone, the following annual, shot-term benefits would be produced:
- No additional medical costs,
- 115,000 fewer strokes,
- 106,000 fewer CAD events,
- 77,000 fewer deaths,
- 46,000 fewer skilled nursing facility and recovery facility admissions, and
- 4,000 fewer long term care placements (Pyenson, 2004)

The prevalence of high blood pressure by age in Americans 20 and older between 1999 and 2002 was:
- For ages 20-34, 11.1 percent for men and 5.8 percent for women
- For ages 35-44, 21.3 percent for men and 18.1 percent for women
- For ages 45-54, 34.1 percent for men and 34.0 percent for women
- For ages 55-64, 46.6 percent for men and 55.5 percent for women
- For ages 65-74, 60.9 percent for men and 74.0 percent for women
- For ages 75+, 69.2 percent for men and 83.4 percent for women (AHA, 2004)

The death rates per 100,000 in 2002 from high blood pressure were:
- 14.4 for White Males
- 49.6 for Black Males
- 13.7 for White Females
- 40.5 for Black Females (AHA High BP Statistics, 2003)

In the SHEP study involving hypertensive individuals over age 60 with pretreatment SBP >160 and DBP <90 mmHg, individuals treated with chlorthalidone (with or without BB) had reductions in the primary endpoint of stroke (36 percent), as well as HF events (54 percent), MI (27 percent), and overall CVD (32 percent) as compared with the placebo group (SHEP, 1991).

Although no randomized prospective clinical trial has conclusively proven the benefits of treatment of hypertension in individuals with stage 1 systolic hypertension (140–159 mmHg), hypertension therapy should

not be withheld in these patients, and therapy should not be withheld on the basis of age (JNC-7, 2003). There is no definitive evidence of an increase in risk of aggressive treatment (a J-curve) unless DBP is lowered to <55 or 60 mmHg by treatment (Somes, 1999).

For treatment of hypertension in patients 80 and older, hypertension is a significant problem. Controlling high blood pressure is important and beneficial for this age group; however there are also significant risks of serious complications and death. In one study, 70% of those 80 and older have hypertension, and among the oldest participants only 38% of men and 23% of women had a blood pressure controlled to less than 140/90 mm Hg. Since the relative and very high absolute risks among those 80 and over are very similar, their data suggest that the 80 and over age group have the most to gain from blood pressure reduction, even if they have a shorter lifespan remaining (Lloyd-Jones, 2005).

A meta-analysis of eight placebo-controlled trials in 15,693 elderly patients followed for 4 years found that active antihypertensive treatment reduced coronary events (23 percent), strokes (30 percent), cardiovascular deaths (18 percent), and total deaths (13 percent), with the benefit particularly great in those older than 70 years (Staessen, 2000). Benefits of therapy have been demonstrated even in individuals over 80 years of age (Hansson, 1999 & Gueyffier, 1999). However, in the same study (Gueyffier, 1999), the meta-analysis showed that while the risk of cardiovascular and stroke events with blood pressure control decreased, there was an increase in mortality suggesting that a reduction in stroke events of 36% may have to be balanced against a 14% increase in total mortality (Gueyffier, 1999). In addition, a review article by Goodwin showed that BP is protective of mortality in those less than 80 years of age, and that mortality increases with treatment in those older than 80 years of age (Goodwin, 2003).

It is important to exclude patients with End Stage Renal Disease due to the complicated health factors with this condition. Eleven percent of the U.S. population has chronic kidney disease (Smith, 2004). Treatment strategies for hypertension are different for patients with End Stage Renal Disease especially if the patient is on dialysis. Adequacy and duration of dialysis are key determinants of blood pressure in ESRD patients. There seems to be a lack of consensus regarding treatment of hypertension for ESRD patients based on antihypertensive prescription patterns (Griffith, 2003).

Financial Importance:

Hypertension is extremely costly for the United States. High blood pressure and its complications cost the U.S. economy more than $100 billion each year (NHLBI, 2004). When you look at just the office visits to physicians, high blood pressure causes more visits than any other condition. Just a 10% reduction in visits would save $478 million each year (Facts about HBP, NHLBI). To give perspective, in 2002 there were 17.2 million visits to office based physicians related to hypertension (CDC Hypertension Fact Sheet, 2003).

In addition, drugs to treat hypertension are among the leading prescriptions in the U.S.. Two anti-hypertensive drugs are in the NDCHealth Top 50 drugs for 2004 by U.S. sales (NDCHealth Top 200, 2005) and five anti-hypertensive drugs are in the top 11 prescriptions for 2004 by number of U.S. mail and retail prescriptions (NDCHealth Top 10, 2005).

1a.4 **Citations for Evidence of High Impact:** American Heart Association. Heart Disease and Stroke Statistics — 2008 Update.
http://www.americanheart.org/downloadable/heart/1200082005246HS_Stats%202008.final.pdfAccessed: Accessed 15 Jul 2008.

National Institutes of Health, National Heart, Lung, and Blood Institute. Morbidity and Mortality: 2000 Chart Book on Cardiovascular, Lung, and Blood Diseases.
http://www.nhlbi.nih.gov/resources/docs/cht-book.htm

Berra K, Miller NH, Fair JM. Cardiovascular disease prevention and disease management: A critical role for nursing. J Cardiopulm Rehabil 2006;26(4):197-206.

The Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. (JNC-7) Hypertension. 2003 Dec;42(6):1206-52. Epub 2003 Dec 1.

USPSTF - U.S. Preventive Services Task Force. Screening for high blood pressure: recommendations and

rationale. Am J Prev Med. 2003 Aug;25(2):159-64.

Pyenson, et al., Milliman, Inc. "Controlling Hypertension Among Medicare Beneficiaries: Saving Lives Without Additional Cost," (Brookfield, WI: Milliman, 2004). <http://www.phrma.org/publications/policy/23.08.2005.1042.cfm>.AHA.

American Heart Association. High Blood Pressure Statistics. 2004. http://www.americanheart.org/downloadable/heart/1110821765203FS14HBP5.REVdoc.doc Accessed: 8/24/05

AHA. American Heart Association. High Blood Pressure Statistics. 2003. http://www.americanheart.org/presenter.jhtml?identifier=4621 Accessed: 7/18/05

SHEP Cooperative Research Group. Prevention of stroke by antihypertensive drug treatment in older persons with isolated systolic hypertension. Final results of the Systolic Hypertension in the Elderly Program (SHEP). JAMA 1991;265:3255-64.

Somes GW, Pahor M, Shorr RI, Cushman WC, Applegate WB. The role of diastolic blood pressure when treating isolated systolic hypertension. Arch Intern Med 1999;159:2004-9.

Lloyd-Jones DM, Evans JC, Levy D. Hypertension in adults across the age spectrum: current outcomes and control in the community. JAMA 2005; 294(4):466-472.

Staessen JA, Gasowski J, Wang JG, Thijs L, Den Hond E, Boissel JP et al. Risks of untreated and treated isolated systolic hypertension in the elderly: meta-analysis of outcome trials. Lancet 2000; 355(9207):865-872.

Hansson L, Lindholm LH, Ekbom T, Dahlof B, Lanke J, Schersten B et al. Randomised trial of old and new antihypertensive drugs in elderly patients: cardiovascular mortality and morbidity the Swedish Trial in Old Patients with Hypertension-2 study. Lancet 1999; 354(9192):1751-1756.

Gueyffier F, Bulpitt C, Boissel JP, Schron E, Ekbom T, Fagard R et al. Antihypertensive drugs in very old people: a subgroup meta-analysis of randomised controlled trials. INDANA Group. Lancet 1999; 353(9155):793-796.

Goodwin, James S. Embracing complexity: A consideration of hypertension in the very old. J Gerontol A Biol Sci Med Sci. 2003 Jul;58(7):653-8. Review.

Griffith TF, Chua BS, Allen AS, Klassen PS, Reddan DN, Szczech LA. Characteristics of treated hypertension in incident hemodialysis and peritoneal dialysis patients. Am J Kidney Dis 2003; 42(6):1260-1269.

CDC. National Center for Health Statistics. Hypertension Fact Sheet. 2003. Accessed: 7/14/05. http://www.cdc.gov/nchs/fastats/hyprtens.htm

NDCHealth Top 200 Drugs for 2004 by U.S. Sales. Accessed: 7/25/05. http://www.ndchealth.com/press_center/uspharmaIndustryData/ndchealthtop2002004sales.htm

NDCHealth Top 200 Drugs for 2004 by U.S. Sales Accessed: 7/25/05. http://www.ndchealth.com/press_center/uspharmaindustrydata/2004top10productsbytotalprescription.htm

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Better control of Blood Pressure has been shown to significantly reduce the probability of serious and costly complications, including coronary heart disease, congestive heart failure, stroke, ruptured aortic aneurysm, renal disease and retinopathy.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:

1b
C☐
P☐
M☐
N☐

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

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

[Data collected from physician applications to the Heart/Stroke Recognition Program]

	Year	N (physicians)	N (patients)	Avg	P10	P25	P50	P75	P90
All Physi-	2005	51	1415	71.37	44.0	64.0	76.0	84.0	92.0
	2006	561	21510	75.01	60.0	68.0	76.0	84.0	92.0
cians	2007	839	26287	75.14	60.0	68.0	76.0	84.0	88.6
	2008	679	23843	75.40	60.0	68.0	76.0	84.0	92.0
	2009	208	6062	75.59	60.0	68.0	76.0	84.0	92.0

1b.3 Citations for data on performance gap:
NA

1b.4 Summary of Data on disparities by population group:
NA

1b.5 Citations for data on Disparities:
NA

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** The most frequent and serious complications of uncontrolled hypertension include coronary heart disease, congestive heart failure, stroke, ruptured aortic aneurysm, renal disease, and retinopathy. Better control of BP has been shown to significantly reduce the probability that these undesirable and costly outcomes will occur. Thus, the relationship between the measure (control of hypertension) and the long-term clinical outcomes listed is well established. In clinical trials, antihypertensive therapy has been associated with reductions in stroke incidence (35-40%), myocardial infarction (20-25%) and heart failure (>50%) (JNC-7, 2003).

1c.2-3. Type of Evidence:

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Given the prevalence of hypertension, the impact of uncontrolled hypertension on the population that lead to acute clinical conditions/events, and the cost of care for these conditions, this condition could have a significant impact on health plans. Hypertension is a condition where a proven method for controlling hypertensive patients' blood pressure levels may be high on the list of strategic priorities.

The prevalence of hypertension varies in the population by (JNC-7, 2003):
- Age: prevalence and increased risk is higher in adults 40 to 89 years of age;
- Gender: hypertension is more common among men in early adulthood, however after the age of 50, hypertension in women increases faster than in men, and after the age of 60 the prevalence of hypertension in women is equal to or exceeds that in men;
- Race: blacks are more likely to have hypertension than whites;
- Socioeconomic status: persons with lower incomes and lower educational levels are more likely to have hypertension than those with higher incomes and education levels

While prevalence data are useful for understanding the proportion of persons who have HTN, the question from the perspective of controllability is whether any of these groups represent greater challenges for clinical management. The JNC-7 (2003) indicates that "women are more likely than men to know they have hypertension and to have it treated and controlled. In NHANES III, approximately 75 percent of hypertensive Black and White women were aware of their high BP in contrast to 65 percent of hypertensive men in these ethnic groups. Overall, 61 percent of hypertensive women, but only 44 percent of men were being treated with antihypertensive medications. The higher treatment rates in women have been attributed to increased numbers of physician contact" (JNC-7, 2003).

Health plans can supplement and reinforce patient and provider education related to the importance of blood pressure management in patients with hypertension and the decreased risk of coronary events and death associated with lower levels. Education and communication materials can emphasize the importance

1c
C☐
P☐
M☐
N☐

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

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

of adhering to medication, diet, and weight loss programs. Because response to patient and provider education programs has been mixed, health plans should review interventions conducted by other plans, assess studies on effectiveness and design intervention and patient education programs which have proven effective in like settings.

Hypertension is treatable with lifestyle modifications and if goal is not achieved, antihypertensive drugs can be used. A large number of drugs are currently available for reducing BP. Thiazide-type diuretics should be used as initial therapy for most patients, either alone or in combination with one of the other classes (ACEIs, ARBs, BBs, CCBs) that have also been shown to reduce one or more hypertensive complications in randomized controlled outcome trials (JNC-7, 2004).

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

1c.6 Method for rating evidence: NA

1c.7 Summary of Controversy/Contradictory Evidence: NA

1c.8 Citations for Evidence (*other than guidelines***):** The Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. (JNC-7) Hypertension. 2003 Dec;42(6):1206-52. Epub 2003 Dec 1.

Wang Y, Wang QJ. The prevalence of prehypertension and hypertension among US adults according to the new joint national committee guidelines: new challenges of the old problem. Arch Intern Med 2004; 164(19):2126-2134.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
AHA/ACC Secondary Prevention for Patients With Coronary and Other Vascular Disease*: 2006 Update

BLOOD PRESSURE CONTROL: For all patients:
Goal
• Initiate or maintain lifestyle modification—weight control; increased physical activity; alcohol moderation; sodium reduction; and emphasis on increased consumption of fresh fruits, vegetables, and low-fat dairy products. I (B)
<140/90 mm Hg
or
<130/80 mm Hg if patient has diabetes or chronic kidney disease
For patients with blood pressure 140/90 mm Hg (or 130/80 mm Hg for individuals with chronic kidney disease or diabetes):
• As tolerated, add blood pressure medication, treating initially with ß-blockers and/or ACE inhibitors, with addition of other drugs such as thiazides as needed to achieve goal blood pressure. I (A)
[For compelling indications for individual drug classes in specific vascular diseases, see Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7).]

Classification of Recommendations and Level of Evidence*
Classification of Recommendations
Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.
Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb: Usefulness/efficacy is less well established by evidence/opinion.
Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.
Level of Evidence
Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.

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

Level of Evidence B: Data derived from a single randomized trial or nonrandomized studies.
Level of Evidence C: Only consensus opinion of experts, case studies, or standard-of-care.

* Classification of Recommendations and Level of Evidence are expressed in the ACC/AHA format and described in more detail in Table 3.

However, updated guidelines are anticipated in Fall 2011 for BP management. Recent studies International Verapamil SR-Trandolapril Study (INVEST) suggested that treating patients with diabetes or known vascular disease to a a SBP goal of <130 was associated with a higher all cause mortality (JAMA 2010).

1c.10 **Clinical Practice Guideline Citation:** Smith S, Allen J, Blair S., et al. Circulation 2006; 113;2363-2372. AHA/ACC Secondary Prevention for Patients With Coronary and Other Vascular Disease*: 2006 Update

Cooper-DeHoff RM, Gong Y, Handberg EM, Bavry AA, Denardo SJ, Bakris GL, Pepine CJ. Tight blood pressure control and cardiovascular outcomes among hypertensive patients with diabetes and coronary artery disease. JAMA 2010 304(1); 61-68.

1c.11 **National Guideline Clearinghouse or other URL:**

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

1c.13 **Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**
Classification of Recommendations and Level of Evidence*
Classification of Recommendations
Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.
Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb: Usefulness/efficacy is less well established by evidence/opinion.
Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.
Level of Evidence
Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.
Level of Evidence B: Data derived from a single randomized trial or nonrandomized studies.
Level of Evidence C: Only consensus opinion of experts, case studies, or standard-of-care.

* Classification of Recommendations and Level of Evidence are expressed in the ACC/AHA format and described in more detail in Table 3.

1c.14 **Rationale for using this guideline over others:**

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

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):**
The numerator is the number of patients in the denominator whose 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 thresholds.
- BP Threshold 1: <140/80 mm Hg
- BP Threshold 2: <140/90 mm Hg

Use electronic data to identify the most recent BP reading during the measurement year. Calculate a numerator for each threshold selected using the CPT Category II codes in Table IVD-F to determine compliance with the threshold.
If CPT Category II codes are used to identify numerator compliance for this indicator, search for all codes in Table IVD-F and use the most recent code to evaluate whether the patient is numerator compliant. If a combination of data from internal electronic databases and CPT Category II codes is being used, search all sources and use the most recent result.
If there are multiple BPs on the same date of service, use the lowest systolic and lowest diastolic BP on that date as the representative BP.
The patient is noncompliant in the following circumstances.
- The electronic result for the most recent BP test exceeds the desired threshold
- The BP test result is missing
- A BP test was not done during the measurement year

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
12 months

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Table IVD-G: Codes to Identify Systolic and Diastolic BP Levels

Description	CPT Category II
Systolic pressure <140mm Hg	3076F
Systolic pressure =140 mm Hg	3077F
Diastolic pressure <80 mm Hg	3078F
Diastolic pressure 80–89 mm Hg	3079F
Diastolic pressure =90 mm Hg	3080F

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Age 18 years or older as of December 31 of the measurement year.
Patient inclusion criteria 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.
Non-health plan. 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 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

2a-specs
C☐ P☐ M☐ N☐

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

- 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

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

2a.5 Target population gender:
2a.6 Target population age range: 18 years and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
12 months

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Table IVD-D: Codes to Identify AMI, PTCA, and CABG

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
PTCA	33140, 92980, 92982, 92995			00.66, 36.06, 36.07, 36.09

Table IVD-E: 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

Medical record text Coronary artery disease
Stable angina
Lower extremity arterial disease/peripheral artery disease
Ischemia
Stroke
Artheroembolism
Renal artery atherosclerosis

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** None

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

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
NA

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
NA

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
After a measure is created, it will go through first-year analysis. This anaysis consists of a review of data completeness, national results, regional results, and eligible population and prevalence. The first-year results are compared by data collection methodology, health plan accreditation status and finally, are compared to the field test results.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
NA

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic Health/Medical Record, Survey: Patient, Survey: Provider

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
NA

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

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

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

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

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

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

Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 **Data/sample** *(description of data/sample and size)*: We are conducting analyses of reliability and will provide as soon as possible.

2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)*:
NA

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
NA

2b C☐ P☐ M☐ N☐

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)*: NA

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*:
NA

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
NA

2c C☐ P☐ M☐ N☐

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s)**:
NA

2d.2 **Citations for Evidence**:
NA

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

2d.4 **Analytic Method** *(type analysis & rationale)*:
NA

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

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*: NA

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

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

2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** NA

2e C☐ P☐ M☐ N☐ NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: NA

2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*:

2f C☐ P☐ M☐ N☐

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

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

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

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 ... [1]

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND ... [2]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical ... [3]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American ... [4]

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant differe ... [5]

NA

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
NA

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)*: NA

2g.2 Analytic Method *(type of analysis & rationale)*:
NA

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

2g
C☐ P☐ M☐ N☐ NA☐

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

2h. Disparities in Care

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

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

2h
C☐ P☐ M☐ N☐ NA☐

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

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

2

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

2
C☐ P☐ M☐ N☐

3. USABILITY

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

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 Current Use: In use

3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) *(If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years)*:
Healthcare Effectiveness Data and Information Set (HEDIS) - Health Plans and Physician Measurement

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
Quality Compass: http://www.ncqa.org/tabid/177/Default.aspx
America´s Best Health Plans: http://www.ncqa.org/tabid/506/Default.aspx

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)*: None

3a.5 Methods *(e.g., focus group, survey, QI project)*:
NA

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

3a
C☐ P☐ M☐ N☐

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

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

3b.1 **NQF # and Title of similar or related measures:**
None

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 **Are the measure specifications harmonized? If not, why?**
Note that this measure is different from the Contolling High Blood Pressure (0018) measure in that the denominators are different. IVD: Blood Pressure Control (0075) is specific to the population diagnosed with IVD while Contolling High Blood Pressure (0018) measures BP control in the population of patients with a diagnosis of hypertension.

3b C☐ P☐ M☐ N☐ NA☐

3c. Distinctive or Additive Value
3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:**
NA

5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**
NA

3c C☐ P☐ M☐ N☐ NA☐

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

3

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

3 C☐ P☐ M☐ N☐

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)

Eval Rating

4a. Data Generated as a Byproduct of Care Processes

4a.1-2 **How are the data elements that are needed to compute measure scores generated?**
Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition)

4a C☐ P☐ M☐ N☐

4b. Electronic Sources

4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*)
Yes

4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**

4b C☐ P☐ M☐ N☐

4c. Exclusions

4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?**
No

4c.2 **If yes, provide justification.**

4c C☐ P☐ M☐ N☐ NA☐

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

4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and**

4d C☐ P☐

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

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

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

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

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

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

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

describe how these potential problems could be audited. If audited, provide results. NA	**M☐** **N☐**
4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** NA **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** NA **4e.3 Evidence for costs:** NA **4e.4 Business case documentation:** NA	**4e** **C☐** **P☐** **M☐** **N☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**
CONTACT INFORMATION	
Co.1 Measure Steward (Intellectual Property Owner) **Co.1 Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 **Co.2 Point of Contact** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-	
Measure Developer If different from Measure Steward **Co.3 Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 **Co.4 Point of Contact** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-	
Co.5 Submitter If different from Measure Steward POC Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-, National Committee for Quality Assurance	
Co.6 Additional organizations that sponsored/participated in measure development	
ADDITIONAL INFORMATION	

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

Workgroup/Expert Panel involved in measure development Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.** NCQA follows a standard process of vetting members of the measurement advisory panel for conflicts of interest.
Ad.2 **If adapted, provide name of original measure:** Ad.3-5 **If adapted, provide original specifications URL or attachment**
Measure Developer/Steward Updates and Ongoing Maintenance Ad.6 **Year the measure was first released:** Ad.7 **Month and Year of most recent revision:** 07, 2009 Ad.8 **What is your frequency for review/update of this measure?** Approximately every 3 years, sooner if the clinical guidelines have changed significantly. Ad.9 **When is the next scheduled review/update for this measure?**
Ad.10 **Copyright statement/disclaimers:**
Ad.11 -13 **Additional Information web page URL or attachment:**
Date of Submission (*MM/DD/YY*)**:** 12/31/2010

Page 12: [1] Comment [k13] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 12: [2] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

Page 12: [3] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR

rationale/data support no risk adjustment.

Page 12: [4] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 12: [5] Comment [k19] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Reliability was estimated by using the beta-binomial model. Beta-binomial is a better fit when estimating the reliability of simple pass/fail rate measures as is the case with most HEDIS® health plan measures. The beta-binomial model assumes the plan score is a binomial random variable conditional on the plan's true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates. The beta distribution can be symmetric, skewed or even U-shaped.

Reliability used here is the ratio of signal to noise. The signal in this case is the proportion of the variability in measured performance that can be explained by real differences in performance. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in performance. The higher the reliability score, the greater is the confidence with which one can distinguish the performance of one plan from another. A reliability score greater than or equal to 0.7 is considered very good.

Measure Name	N Obs	N	Mean	Std Dev	Median	Mini-mum	Maxi-mum	10th Percentile	25th Percentile	75th Percentile	90th Percentile	Lower 95% CL for Mean	Upper 95% CL for Mean	Coefficient of Variation (CV) (std/mean*100)	Beta-Binomial Reliability
Comprehensive IVD Care - BP control (<130/80)	2341	2338	44.32	14.01	44	2.86	96	28	34.29	52.00	62.50	43.75	44.89	31.61	0.62
Comprehensive IVD Care - BP control (<140/90)	2341	2338	75.14	12.46	76	24	100	60	68	84.00	91.43	74.64	75.65	16.58	0.67
Comprehensive IVD Care - BP screen	2341	2338	99.58	3.10	100	44	100	100	100	100.00	100.00	99.45	99.70	3.11	0.80
Comprehensive IVD Care - Complete lipid profile	2341	2338	86.23	11.36	88	24	100	71.43	80	96.00	100.00	85.77	86.69	13.18	0.73
Comprehensive IVD Care - LDL control (<100 mg/dL)	2341	2338	63.99	14.49	64	12	100	44	52	74.29	84.00	63.40	64.58	22.64	0.69
Comprehensive IVD Care - LDL control (<130 mg/dL)	2341	2338	78.87	12.10	80	24	100	62.86	72	88.00	94.29	78.38	79.36	15.34	0.67
Comprehensive IVD Care - LDL screen	2341	2338	86.77	11.11	88	24	100	72	80	96.00	100.00	86.32	87.23	12.80	0.73
Comprehensive IVD Care - Patient prescribed Aspirin or other antithrombotic	2341	2312	89.56	11.50	92	8.57	100	76	84	97.14	100.00	89.10	90.03	12.84	0.78

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 1486 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Chronic Stable Coronary Artery Disease: Blood Pressure Control
De.2 **Brief description of measure**: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period with a blood pressure <140/90 mm Hg OR patients with a blood pressure =140/90 mm Hg and prescribed 2 or more anti-hypertensive medications during the most recent office visit
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness, Equity De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** No, testing will be completed within 12 months D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, High resource use 1a.2 1a.3 **Summary of Evidence of High Impact:** •16.3 million Americans are living with coronary heart disease – of that 16.3 million, 54% are men and 46% are women. (1) •Coronary heart disease makes up more than half of all cardiovascular events in men and women less than 75 years of age. (1) •The lifetime risk of developing coronary heart disease after age 40 is 49% for men and 32% for women. (1) •The incidence of coronary heart disease in women lags behind men by 10 years for total coronary heart disease and by 20 years for more serious clinical events such as myocardial infarction and death.(1) •Coronary heart disease caused approximately 1 of every 6 deaths in the United States in 2007. (1) •While death rates have fallen from 1968 to the present, coronary heart disease is the largest killer of men and women in the United States. (1) It has been estimated that approximately 47% of this decrease is attributed to treatments (medical and surgical), while approximately 44% is attributed to changes in risk	**1a** C☐ P☐ M☐ N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

factors. (1)

•In 2007, the estimated direct and indirect cost for coronary heart disease in the United States is $177.5 billion. (1)

•In 2006, coronary artery disease was the most expensive condition treated in US hospitals at a cost of $52.6 billion (2) and accounted for 5% of total hospitalization costs.(3)

•Thirty percent of Medicare's total expenditures are applied to cardiovascular disease.(4)

•In 2007, $5.2 billion was spent on outpatient visits related to chronic ischemic heart disease.(5)

1a.4 **Citations for Evidence of High Impact:** (1) Roger VL, Go AS, Lloyd-Jones DM, et al; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2011 update: a report from the American Heart Association. Circulation. 2011;123:e000–e000. Available at: http://circ.ahajournals.org/cgi/reprint/CIR.0b013e3182009701v1
(2) Andrews RM. The national hospital bill: the most expensive conditions by payer, 2006. Agency for Healthcare Research and Quality, Statistical Brief #59. 2008. Available at: http://www.hcup-us.ahrq.gov/reports/ statbriefs/ sb59.pdf.
(3) Agency for Healthcare Research and Quality. HCUP Facts and Figures, 2006: Statistics on Hospital-based Care in the United State. Available at: http://www.hcup-us.ahrq.gov/reports/factsandfigures/facts_figures_2006. jsp#ex4_2b.
(4) Centers for Medicare and Medicaid Services. Health Care Financing Review: Medicare & Medicaid Statistical Supplement. Table 10.4: Hospital Outpatient bills, covered charges, and program payments under medicare by selected reasons for the visit: calendar year 2007. Baltimore, MD: Centers for Medicare and Medicaid Services; 2008. Available at"
http://www.cms.gov.MedicareMedicaidStatSupp/downloads/2008Table10.4.pdf
(5) Trogdon JG, Finkelstein EA, Nwaise IA, Tangka FK, Orenstein D. The economic burden of chronic cardiovascular disease for major insurers. Health Promotion Practice. 2007;8(3):234-242

1b. Opportunity for Improvement

1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Improvement in management of blood pressure in patients with chronic stable coronary artery disease.

1b.2 **Summary of data demonstrating performance gap (variation or overall poor performance) across providers:**
Performance relating to the National Committee for Quality Assurance measure of controlling high blood pressure shows the following for 2007 (1):

Measure
Percentage of hypertensive members age 18 to 85 whose blood pressure was controlled to less than 140/90 mmHg during the past year. Both systolic and diastolic pressure must be at or under the threshold in order to be considered controlled:

	Commercial	Medicare	Medicaid
Control Rate	62.2	57.7	53.4

HealthPartners reported performance results in 2006 on their blood pressure control measure, which is part of an optimal coronary artery disease care composite measure. 37.5% of members had all of their CAD risk factors optimally managed (LDL <100, blood pressure <140/90mmHg, daily aspirin, and documented non-tobacco use)2929. 100% performance is not expected for this measure. HealthPartners has set a goal of 55% as excellent performance and 60% as superior performance2929. Individual rates by risk factor are also reported out separately. 73.5% of members with CAD had blood pressure control <140/90mmHg in the measurement year and 55.7% of members had blood pressure control <130/80mmHg in the measurement year. (2)

1b.3 **Citations for data on performance gap:**
(1)The State of Healthcare Quality 2008. National Committee for Quality Assurance. Washington DC. Available at: http://www.ncqa.org/tabid/836/Default.aspx.

1b
C☐
P☐
M☐
N☐

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

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

(2)HealthPartners. 2007 Clinical Indicators Report – 2006/2007 Results. HealthPartners. Minneapolis MN. 2007

1b.4 Summary of Data on disparities by population group:
We are not aware of any publications/evidence outlining disparities in this area.

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Effective management of blood pressure in patients with CAD can help prevent cardiovascular events, including myocardial infarction.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**

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

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):** None

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
Blood pressure control according to Joint National Conference VII guidelines is recommended (ie, blood pressure <140/90 mm Hg or < 130/80 mm Hg for patients with diabetes or chronic kidney disease) (Class I Recommendation, Level A Evidence) (ACC/AHA, 2007)

For hypertensive patients with well established coronary artery disease, it is useful to add blood pressure medication as tolerated, treating initially with beta-blockers and/or ACE inhibitors, with addition of other drugs as needed to achieve target blood pressure. (Class I Recommendation, Level C Evidence) (ACC/AHA, 2007)

1c.10 Clinical Practice Guideline Citation: Fraker JD, Fihn SD, writing on behalf of the 2002 Chronic Stable Angina Writing Committee. 2007 chronic angina focused update of the ACC/AHA 2002 Guidelines for the Management of Patients with Chronic Stable Angina: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines Writing Group to Develop the Focused Update of the 2002 Guidelines for the Management of Patients with Chronic Stable Angina. J Am Coll Cardiol. 2007;50:2264-2274.

1c.11 National Guideline Clearinghouse or other URL:

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
ACC/AHA Recommendations: Class I Recommendation Level A Evidence and Class I Recommendation Level C Evidence JNC VII - not ranked

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF*)**:**
ACC/AHA Classification of Recommendations and Levels of Evidence
Classification of Recommendations

1c
C ☐
P ☐
M ☐
N ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s). ... [1]

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a ... [2]

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

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the ... [3]

Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.
Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb: Usefulness/efficacy is less well established by evidence/opinion.
Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.
Level of Evidence
Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.
Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies.
Level of Evidence C: Only consensus opinion of experts, case studies, or standard-of-care.

1c.14 **Rationale for using this guideline over others:**
It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other healthcare providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to included documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in the quality of care.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?* **1**

Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, **met? 1**
Rationale:
Y☐
N☐

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria) **Eval Rating**

2a. MEASURE SPECIFICATIONS

S.1 **Do you have a web page where current detailed measure specifications can be obtained?**
S.2 **If yes, provide web page URL:**

2a. Precisely Specified

2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):**
Patients with a blood pressure <140/90 mm Hg*
OR
Patients with a blood pressure =140/90 mm Hg and prescribed** 2 or more anti-hypertensive medications during the most recent office visit

*BP value used for measure calculation:
•Must be specified in medical record if >1 value (systolic/diastolic) recorded, and
•Must be value upon which treatment decision was based, and
•May be obtained by measurement during office visit or review of a home blood pressure log, OR of a 24 hour ambulatory blood pressure monitor, but the value on which the treatment decision is being made and which might represent the average of more than 1 reading must be documented as such in the medical record

**Prescribed may include prescriptions given to the patient for 2 or more anti-hypertensive medications at most recent office visit OR patient already taking 2 or more anti-hypertensive medications as documented in current medication list. (Each anti-hypertensive component in a combination medication should be counted individually.)

Instructions:

2a-specs
C☐
P☐
M☐
N☐

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

All patients aged 18 years and older with a diagnosis of coronary artery disease must have a measurement of blood pressure recorded in order to satisfy the measure.

Report number of patients for 1st numerator component (outcome)
AND
Report number of patients for 2nd numerator component (process)
AND
Report total number of patients for all numerator components

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
Each visit within the measurement period.

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative: Report CPT II Code Report the CPT Category II code(s) designated for this numerator:
Patients with a blood pressure <140/90 mm Hg*
Target blood pressure for a patient with CAD is <140/90 mm Hg
• 3074F Most recent systolic blood pressure < 130 mm Hg
OR
• 3075F Most recent systolic blood pressure 130 to 139 mm Hg
AND
• 3078F Most recent diastolic blood pressure < 80 mm Hg
OR
• 3079F Most recent diastolic blood pressure 80 - 89 mm Hg
OR
Patients with a blood pressure =140/90 mm Hg and prescribed** 2 or more anti-hypertensive medications during the most recent office visit during the measurement period
• 3077F Most recent systolic blood pressure =140 mm Hg
OR
• 3080F Most recent diastolic blood pressure =90 mm Hg
AND
Patient prescribed 2 or more anti-hypertensive medications**
• 4XXXF (in development)- Two or more anti-hypertensive medications prescribed

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Aged 18 years and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
12 consecutive months

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):**
Documentation of medical reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, allergy, intolerant, postural hypotension, other medical reasons)

Documentation of patient reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, patient declined, other patient reasons)

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

Documentation of system reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, financial reasons, other reasons attributable to the health care delivery system)

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative:
Documentation of medical reason(s) for not prescribing 2 or more anti-hypertensive medications
• Append modifier to CPT II code 4XXXF-1P (in development)
Documentation of patient reason(s) for not prescribing 2 or more anti-hypertensive medications
• Append modifier to CPT II code 4XXXF-2P (in development)
Documentation of system reason(s) for not prescribing 2 or more anti-hypertensive medications
• Append modifier to CPT II code 4XXXF-3P (in development)

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
See attached for calculation algorithm.

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

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment PCPI_CAD-1_BPControl.pdf

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

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Home, Ambulatory Care: Office, Ambulatory Care: Clinic, Nursing home (NH) /Skilled Nursing Facility (SNF), Ambulatory Care: Hospital Outpatient, Assisted Living, Group homes

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

Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 **Data/sample** *(description of data/sample and size)*: PCPI staff analysis of available testing data for this measure is ongoing and will be submitted to NQF separately and at the earliest possible date.

2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)*:

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:

2b C☐ P☐ M☐ N☐

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)*:

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*:

All PCPI performance measures are assessed for content validity by expert work group members during the development process. Additional input on the content validity of draft measures is obtained through a 30-day public comment period and by also soliciting comments from a panel of consumer, purchaser, and patient representatives convened by the PCPI specifically for this purpose. All comments received are reviewed by the expert work group and the measures are adjusted as needed. Other external review groups (eg, focus groups) may be convened if there are any remaining concerns related to the content validity of the measures.

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:

2c C☐ P☐ M☐ N☐

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**

No testing data available at this time.

2d.2 **Citations for Evidence:**

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

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

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

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*: This measure does not employ the use of risk adjustment.

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

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

2e C☐ P☐ M☐ N☐ NA☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

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

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; ... [4]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [5]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and w ... [6]

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:	
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: **2g.2 Analytic Method** *(type of analysis & rationale)*: **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*:	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The measure is not stratified by patient groups or cohorts that could potentially be affected by disparities in care, nor are we aware of any existing research identifying disparities in care that may be relevant to this measure. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** We are not aware of any relevant disparities that have been identified.	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** Testing not yet completed **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): As a newly developed measure, this measure is not yet used in any public reporting initiative. The measure will, however, be eligible for inclusion in the CMS PQRS and other government programs in 2012 and would thus provide information about clinician participation to the public. ACCF, AHA and the PCPI believes that the reporting of such participation information is a beneficial first step on a trajectory toward the public reporting of performance results, which is most appropriate after the measures are thoroughly tested and the reliability of the performance data has been validated.	**3a** C☐ P☐ M☐ N☐

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

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

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

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

3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** All PCPI measures are suitable for use in quality improvement initiatives and are made freely available on the PCPI website and through the implementation efforts of medical specialty societies and other PCPI members. The PCPI strongly encourages the use of its measures in QI initiatives and seeks to provide information on such initiatives to PCPI members. **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)***:** 3a.5 **Methods** *(e.g., focus group, survey, QI project)***:** 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:**	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐

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

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

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

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

4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Although we are not currently aware of any unintended consequences related to this measure, we plan through an active redesign of the PCPI website to facilitate the collection of information of unintended consequences from the users of PCPI measures.	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Costs to implement the measure have not been calculated. 4e.3 **Evidence for costs:** 4e.4 **Business case documentation:**	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y☐ N☐ A☐
CONTACT INFORMATION	

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

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

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

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

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.2 Point of Contact
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-

Measure Developer If different from Measure Steward
Co.3 Organization
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.4 Point of Contact
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-

Co.5 Submitter If different from Measure Steward POC
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-, American Medical Association

Co.6 Additional organizations that sponsored/participated in measure development
American College of Cardiology Foundation, American Heart Association

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
Bruce Abramowitz, MD, FACC (interventional cardiology; measure implementation)
Karen Alexander, MD (cardiology; geriatrics)
Craig T. Beam, CRE (patient representative)
Robert O. Bonow, MD, MACC, FAHA, FACP (cardiology)
Jill S. Burkiewicz, PharmD, BCPS (pharmacy)
Michael Crouch, MD, MSPH (family medicine)
David C. Goff, Jr., MD, PhD, FAHA, FACP (internal medicine)
Richard Hellman, MD, FACP, FACE (endocrinology)
Thomas James, III, FACP, FAAP (health plan representative)
Marjorie L. King, MD, FACC, MAACVPR (cardiology; cardiac rehabilitation)
Edison A. Machado, Jr., MD, MBA (measure implementation)
Eduardo Ortiz, MD, MPH (guideline development)
Michael O'Toole, MD (cardiology; electrophysiology; measure implementation)
Stephen D. Persell, MD, MPH (internal medicine; measure implementation)
Jesse M. Pines, MD, MBA, MSCE, FAAEM (emergency medicine)
Frank J. Rybicki, MD, PhD (radiology)
Lawrence B. Sadwin (patient representative)
Joanna D. Sikkema, MSN, ANP-BC, FAHA (cardiology)
Peter K. Smith, MD (thoracic surgery)
Patrick J. Torcson, MD, FACP, MMM (hospital medicine)
John B. Wong MD, FACP (internal medicine)

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty
or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Ad.2 If adapted, provide name of original measure:
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.6 Year the measure was first released: 2003
Ad.7 Month and Year of most recent revision: 05, 2009
Ad.8 What is your frequency for review/update of this measure? Every 3 years or as new evidence becomes available that materially affects the measures
Ad.9 When is the next scheduled review/update for this measure? 05, 2012

Ad.10 Copyright statement/disclaimers: This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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THE MEASURES AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

Limited proprietary coding is contained in the measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The AMA, the ACC, the AHA, the Consortium and its members disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specifications.

Ad.11 -13 Additional Information web page URL or attachment: Attachment Testing Summary CAD NQF Final_10_10-634238750858822590.pdf

Date of Submission (*MM/DD/YY*)**:** 01/20/2011

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Page 4: [2] Comment [k5] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 4: [3] Comment [k7] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 8: [4] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR

rationale/data support no risk adjustment.

Page 8: [6] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

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

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0068 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic
De.2 **Brief description of measure***:* 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.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** Proprietary measure A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y☐** **N☐**
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality 1a.2 1a.3 **Summary of Evidence of High Impact:** Coronary Heart Disease (CHD) was an underlying or contributing cause of death for 451,300 people that accounted for 1 of every 5 deaths in the United States in 2004. AMI was as an underlying or contributing cause of death for 156,000 people (AHA, 2008). In addition, the prevalence of CHD for both sexes in 2005 is nearly 16 million people or 7.3% of the American population (AHA, 2008) The cost of cardiovascular diseases and stroke in the United States for 2008 is estimated at $448.5 billion (AHA, 2008). This figure includes health expenditures (direct costs such as the cost of physicians and healthcare practitioners, hospital and nursing home services, medications, home health care and other medical durables) and lost productivity resulting from morbidity and mortality (indirect costs). Acute Myocardial Infarction (AMI) represents 18% of hospital discharges and 28% of deaths due to heart disease (NHLBI, 2000). Research has shown that costs associated with cardiovascular disease for hospitals are easily $156 billion (AHA, 2008). From 1979 to 2003, the percentage of discharges of patients with discharges from short-stay hospitals with CHD as the main diagnosis rose by 31%. Evidence has shown that age is a strong demographic factor for CHD. The average life expectancy has risen after 10 years by about 2 years since 1965, it is projected by 2030, 1 in 5 Americans will be aged 65 or older. The need for CHD management is essential (Berra, 2006). Aspirin	1a C☐ P☐ M☐ N☐

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

treatments reduce MI in men (127 events per 100,000 person-years) and women (17 events per 100,000 person-years) (Grieving, 2008).
While studies have shown warfarin to be more effective, aspirin is a safer, more convenient, and less expensive form of therapy (Patrono, 2004). Aspirin therapy has been shown to directly reduce 14% of the odds of cardiovascular events among men and 12% of the odds for women (Berger, 2006). Aspirin use reduced the number of strokes by 20%, MI by 30%, and other vascular events by 30% (Weisman, 2002).
Also, aspirin treatments have been shown to prevent 1 cardiovascular event over an average follow-up of 6.4 years. This means that on average in a 6.4 year time period the use of aspirin therapy results in a benefit of 3 cardiovascular events prevented per 1000 women and 4 events prevented per 1000 men (Berger, 2006). Even for patients with peripheral arterial disease, aspirin has been shown to reduce CHD in people (Kikano, 2007).

While people with diabetes aged 65 or greater and aged 50-64 with CVD risks such as currently smoking, diagnosed hypertension, and diagnosed hypercholesterolemia use aspirin (74% and 78% respectively), only 60% of the age group of 35-49 with CVD risks uses aspirin. In addition, by stratifying by sex, research also shows that while 83% of men with CVD risk uses aspirin, only 65% of women with CVD risks take aspirin (Persell, 2004).
It was found that a secondary prevention portfolio with the inclusion of aspirin holds great promise for reducing the burden of cardiovascular disease in the highest risk patients for those with coronary heart disease (CHD) or stroke. (Robinson, 2005).
In addition to the benefits of aspirin, the adherence to the medication is high. It was found in a study that aspirin compliance was excellent in the secondary prevention of ischemic stroke. Even if the patients who failed to show up for laboratory testing are regarded as noncompliants, at least 90% of all patients were compliant in taking the aspirin (Lago, 2006).
Lastly, by calculating cost effectiveness and clinically preventable burden, the National Commission on Prevention Priorities (NCPP) determined aspirin use was the top most effective clinical preventable service (Maciosek, 2006).

1a.4 **Citations for Evidence of High Impact:** American Diabetes Association. Standards of Medical Care in Diabetes – 2008. Diabetes Care 31:S12-S54, 2008.

American Heart Association. Heart Disease and Stroke Statistics — 2008 Update. http://www.americanheart.org/downloadable/heart/1200082005246HS_Stats%202008.final.pdfAccessed: Accessed 15 Jul 2008.

Berger, JS. Roncaglioni MC, Avanzini F. Aspirin for the primary prevention of cardiovascular events in women and men: a sex-specific meta-analysis of randomized controlled trials. JAMA 2006;296(4):306-314.

Berra K, Miller NH, Fair JM. Cardiovascular disease prevention and disease management: A critical role for nursing. J Cardiopulm Rehabil 2006;26(4):197-206.

Grieving, JP, Buskens E, Koffijberg H, Algra A. Cost-effectiveness of aspirin treatment in the primary prevention of cardiovascular disease events in subgroups based on age, gender, and varying cardiovascular risk. Circulation 2008;117:2875-2883.

Kikano GE, Brown MT. Antiplatelet therapy for atherothrombotic disease: an update for the primary care physician. Mayo Clin Proc. May 2007;82(5):583-593.

Lago A, Tembl JI, Pareja A, Ponz A, Ferrer JM, Vallés J, Santos MT: Adherence to Aspirin in Secondary Prevention of Ischemic Stroke. Cerebrovasc Dis 2006;21:353-356.

Maciosek MV, Coffield AB, Edwards NM, Flottemesch TJ, Goodman MJ, Solberg LI. Priorities among effective clinical preventive services: results of a systematic review and analysis. Am J Prev Med 2006;31 (1): 52-61.

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Persell SD, Baker DW. Aspirin use among adults with diabetes: recent trends and emerging sex disparities. Arch Intern Med 2004;164(22):2492-2499.

Robinson JG, Maheshwari N. A "poly-portfolio" for secondary prevention: a strategy to reduce subsequent events by up to 97% over five years. Am J Cardiol. 2005 Feb 1;95(3):373-8.

Weisman SM, Graham DY. Evaluation of the benefits and risks of low-dose aspirin in the secondary prevention of cardiovascular and cerebrovascular events. Arch Intern Med. Oct 28 2002;162(19):2197-2202.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Aspirin is the safer, more convenient and least expensive form of therapy in reducing caridovascular events amoung men and women; reducing the number of strokes, MI, and other vascular events considerably.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
[Data from physician applications to Heart/Stroke Recognition Program]

Year	N (physicians)	N (patients)	Avg Rate	P10	P25	P50	P75	P90
2005	51	1415	86.55	64.0	80.0	92.0	100.0	100.0
2006	561	21510	91.04	80.0	88.0	92.0	100.0	100.0
2007	821	25577	89.28	76.0	84.0	92.0	97.1	100.0
2008	671	23643	88.13	74.3	84.0	92.0	96.0	100.0
2009	208	6062	92.06	80.0	88.0	96.0	97.1	100.0

1b.3 Citations for data on performance gap:
None

1b.4 Summary of Data on disparities by population group:
NOne

1b.5 Citations for data on Disparities:
None

1b
C☐
P☐
M☐
N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Aspirin therapy has been shown to directly reduce 14% of the odds of cardiovascular events among men and 12% of the odds for women (Berger, 2006). Aspirin use reduced the number of strokes by 20%, MI by 30%, and other vascular events by 30% (Weisman, 2002). In addition, aspirin is a safer, more convenient, and less expensive form of therapy than warfarin(Patrono, 2004).

1c.2-3. Type of Evidence: Evidence-based guideline, Randomized controlled trial, Meta-analysis

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
NA

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

1c
C☐
P☐
M☐
N☐

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

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

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

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve ... [2]

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

1c.6 Method for rating evidence: NA

1c.7 Summary of Controversy/Contradictory Evidence: NA

1c.8 Citations for Evidence (*other than guidelines***):** NA

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
ADA
Use aspirin therapy (75–162 mg/day) as a secondary prevention strategy in those with diabetes with a history of CVD. (Level A)

Level A: Clear evidence from well-conducted, generalizable, randomized controlled trials that are adequately powered, including:
- Evidence from a well-conducted multicenter trial
- Evidence from a meta-analysis that incorporated quality ratings in the analysis

Compelling non-experimental evidence, i.e., "all or none" rule developed by the Centre for Evidence-Based Medicine at Oxford Supportive evidence from well-conducted randomized controlled trials that are adequately powered, including:
- Evidence from a well-conducted trial at one or more institutions

Evidence from a meta-analysis that incorporated quality ratings in the analysis

Use aspirin therapy (75–162 mg/day) as a primary prevention strategy in those with type 1 or 2 diabetes at increased cardiovascular risk, including those who are _40 years of age or who have additional risk factors (family history of CVD, hypertension, smoking, dyslipidemia, or albuminuria). (Level A)

AHA/ACC
Start aspirin 75 to 162 mg/d and continue indefinitely in all patients with coronary and other vascular disease unless contraindicated. Class I, Level A

Class I, Level A:
Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.

ICSI
Aspirin should be prescribed to all patients with stable coronary disease. If a patient is aspirin intolerant, then use clopidogrel.
(Class A; Grade I)

Class A:
Randomized, controlled trial

Grade I :
The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

VA/DoD
Ensure that all patients with ischemic heart disease or angina symptoms receive antiplatelet therapy (aspirin 81-325 mg/day). For patients who require warfarin therapy, aspirin may be safely used at a dose of 80 mg/day.
If use of aspirin is contraindicated, clopidogrel (75 mg/day) may be used. (Quality of Evidence = I ;Strength of Recommendation = A)

Quality of Evidence = I Evidence is obtained from at least one properly randomized controlled trial (RCT).

Strength of Recommendation = A
A strong recommendation, based on evidence or general agreement, that a given procedure or treatment is

useful/effective, always acceptable, and usually indicated

AHA/ASA
The use of aspirin is recommended for cardiovascular (including but not specific to stroke) prophylaxis among persons whose risk is sufficiently high for the benefits to outweigh the risks associated with treatment (a 10-year risk of cardiovascular events of 6% to 10%). (Class I: Level A)

Class I, Level A:
Conditions for which there is evidence for and/or general agreement that the procedure or treatment is useful and effective.

Data derived from multiple randomized clinical trials.

ACCP
For long-term treatment after PCI, the guideline developers recommend aspirin, 75 to 162 mg/day. (Grade 1A)

For long-term treatment after PCI in patients who receive antithrombotic agents such as clopidogrel or warfarin, the guideline developers recommend lower-dose aspirin, 75 to 100 mg/day. (Grade 1C+)

For patients with ischemic stroke who are not receiving thrombolysis, the guideline developers recommend early aspirin therapy, 160 to 325 mg/day (Grade 1A)

Grade 1A: Randomized controlled trials (RCTs) without important limitations

Implications: Strong recommendation; can apply to most patients in most circumstances without reservation

Grade 1C+: No RCTs, but strong RCT results can be unequivocally extrapolated, or overwhelming evidence from observational studies

Implications: Strong recommendation; can apply to most patients in most circumstances

Grade 1A: Randomized controlled trials (RCTs) without important limitations

Implications: Strong recommendation; can apply to most patients in most circumstances without reservation

1c.10 Clinical Practice Guideline Citation: American Diabetes Association. Standards of Medical Care in Diabetes – 2008. Diabetes Care 31:S12-S54, 2008.
Pearson, TA et al. AHA Guidelines for Primary Prevention of Cardiovascular Disease and Stroke: 2002 Update: Consensus Panel Guide to Comprehensive Risk Reduction for Adult Patients Without Coronary or Other Atherosclerotic Vascular Diseases. American Heart Association Science Advisory and Coordinating Committee. Circulation. 2002 Jul 16;106(3):388-91.

Institute for Clinical Systems Improvement (ICSI). Stable coronary artery disease. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2009 Apr. 41
Smith SC, et al. Guidelines for Secondary Prevention for Patients with Coronary and Other Atherosclerotic Vascular Disease: 2006 Update: Endorsed by the National Heart, Lung, and Blood Institute Circulation 2006;113;2363-2372

Veterans Health Administration, Department of Defense. VA/DoD clinical practice guideline for the management of ischemic heart disease. Washington (DC): Veterans Health Administration, Department of Defense; 2003 Nov. Various

Goldstein LB, et al, American Heart Association, American Stroke Association Stroke Council. Primary prevention of ischemic stroke: a guideline from the American Heart Association/American Stroke Association Stroke Council [trunc]. Circulation 2006 Jun 20;113(24):e873-923.

Albers GW, Amarenco P, Easton JD, Sacco RL, Teal P. Antithrombotic and thrombolytic therapy for ischemic stroke: the Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy. Chest 2004 Sep;126 (3 Suppl):483S-512S **1c.11 National Guideline Clearinghouse or other URL:** **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** See above **1c.13 Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:** **1c.14 Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Current aspirin use. The percentage of members in the denominator who are currently taking aspirin. The number of patients who have documentation of use of aspirin or another antithrombotic during the 12-month measurement period. Documentation in the medical record must include, at a minimum, a note indicating the date on which aspirin or another antithrombotic was prescribed or documentation of prescription from another treating physician. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** 12 months **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Table IVD-D: Codes to Identify Prescribed Oral Anti-Platelet 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	**2a-specs** **C☐** **P☐** **M☐** **N☐**

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

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

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Age 18 years or older as of December 31 of the measurement year.
Patient inclusion criteria 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.
Non-health plan. 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 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

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

2a.5 Target population gender:
2a.6 Target population age range: 18 older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
12 months

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Table IVD-F: 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, 077x, 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-022x, 072x, 0987

Codes to Identify AMI, PTCA, and CABG

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
PTCA	33140, 92980, 92982, 92995			00.66, 36.06, 36.07, 36.09

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

Medical record text: Coronary artery disease
Stable angina
Lower extremity arterial disease/peripheral artery disease
Ischemia
Stroke
Artheroembolism
Renal artery atherosclerosis

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** None

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

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

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

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
NA

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
After a measure is created, it will go through first-year analysis. This anaysis consists of a review of data completeness, national results, regional results, and eligible population and prevalence. The first-year results are compared by data collection methodology, health plan accreditation status and finally, are compared to the field test results.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
None

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
NA

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

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

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

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

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** We are conducting analyses of reliability and will provide as soon as possible.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
NA

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
NA

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:** NA

2c.2 Analytic Method *(type of validity & rationale, method for testing)***:**
NA

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test*

2c
C☐
P☐
M☐
N☐

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

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

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

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

conducted):
NA

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**
NA

2d.2 **Citations for Evidence:**
NA

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

2d.4 **Analytic Method** *(type analysis & rationale)*:
NA

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

2d
C☐
P☐
M☐
N☐
NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*: NA

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

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

2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** NA

2e
C☐
P☐
M☐
N☐
NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: NA

2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*:
NA

2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
NA

2f
C☐
P☐
M☐
N☐

2g. Comparability of Multiple Data Sources/Methods

2g.1 **Data/sample** *(description of data/sample and size)*: NA

2g.2 **Analytic Method** *(type of analysis & rationale)*:
NA

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

2g
C☐
P☐
M☐
N☐
NA☐

2h. Disparities in Care

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

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

2h
C☐
P☐
M☐
N☐
NA☐

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about p ... [4]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [5]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and w ... [6]

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation ... [7]

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

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

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C☐** **P☐** **M☐** **N☐**

3. USABILITY

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

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 **Current Use:** In use

3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:**
Healthcare Effectiveness Data and Information Set (HEDIS) - Health Plans and Physician Measurement

3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
Quality Compass: http://www.ncqa.org/tabid/177/Default.aspx
America´s Best Health Plans: http://www.ncqa.org/tabid/506/Default.aspx

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 **Data/sample** *(description of data/sample and size)***:** None

3a.5 **Methods** *(e.g., focus group, survey, QI project)***:**
NA

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

3a
C☐
P☐
M☐
N☐

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

3b.1 **NQF # and Title of similar or related measures:**
None

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 **Are the measure specifications harmonized? If not, why?**
NA

3b
C☐
P☐
M☐
N☐
NA☐

3c. Distinctive or Additive Value
3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:**
NA

5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**
NA

3c
C☐
P☐
M☐
N☐
NA☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**

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

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

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

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

Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** NA	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** NA **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** NA **4e.3 Evidence for costs:** NA **4e.4 Business case documentation:** NA	**4e** **C☐** **P☐** **M☐** **N☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐**

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

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

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

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

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

	P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	Time-limited ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y☐ N☐ A☐

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005

Co.2 **Point of Contact**
Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-

Measure Developer If different from Measure Steward
Co.3 **Organization**
National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005

Co.4 **Point of Contact**
Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-

Co.5 **Submitter If different from Measure Steward POC**
Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-, National Committee for Quality Assurance

Co.6 **Additional organizations that sponsored/participated in measure development**

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
NCQA follows a standard process to vet members for the measurement advisory panel for conflicts of interest.

Ad.2 **If adapted, provide name of original measure:**
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:**
Ad.7 **Month and Year of most recent revision:** 04, 2009
Ad.8 **What is your frequency for review/update of this measure?** Approximately every 3 years, sooner if the clinical guidelines have changed significantly
Ad.9 **When is the next scheduled review/update for this measure?**

Ad.10 **Copyright statement/disclaimers:**

Ad.11 -13 **Additional Information web page URL or attachment:**

Date of Submission (*MM/DD/YY*)**:** 12/31/2010

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Page 4: [2] Comment [k5] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 4: [3] Comment [k6] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 11: [4] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

Page 11: [5] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

rationale/data support no risk adjustment.

Page 11: [6] Comment [k17]	Karen Pace	10/5/2009 8:59:00 AM

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

Page 11: [7] Comment [k19]	Karen Pace	10/5/2009 8:59:00 AM

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

Reliability was estimated by using the beta-binomial model. Beta-binomial is a better fit when estimating the reliability of simple pass/fail rate measures as is the case with most HEDIS® health plan measures. The beta-binomial model assumes the plan score is a binomial random variable conditional on the plan's true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates. The beta distribution can be symmetric, skewed or even U-shaped.

Reliability used here is the ratio of signal to noise. The signal in this case is the proportion of the variability in measured performance that can be explained by real differences in performance. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in performance. The higher the reliability score, the greater is the confidence with which one can distinguish the performance of one plan from another. A reliability score greater than or equal to 0.7 is considered very good.

Measure Name	N Obs	N	Mean	Std Dev	Median	Mini-mum	Maxi-mum	10th Percentile	25th Percentile	75th Percentile	90th Percentile	Lower 95% CL for Mean	Upper 95% CL for Mean	Coefficient of Variation (CV) (std/mean*100)	Beta-Binomial Reliability
Comprehensive IVD Care - BP control (<130/80)	2341	2338	44.32	14.01	44	2.86	96	28	34.29	52.00	62.50	43.75	44.89	31.61	0.62
Comprehensive IVD Care - BP control (<140/90)	2341	2338	75.14	12.46	76	24	100	60	68	84.00	91.43	74.64	75.65	16.58	0.67
Comprehensive IVD Care - BP screen	2341	2338	99.58	3.10	100	44	100	100	100	100.00	100.00	99.45	99.70	3.11	0.80
Comprehensive IVD Care - Complete lipid profile	2341	2338	86.23	11.36	88	24	100	71.43	80	96.00	100.00	85.77	86.69	13.18	0.73
Comprehensive IVD Care - LDL control (<100 mg/dL)	2341	2338	63.99	14.49	64	12	100	44	52	74.29	84.00	63.40	64.58	22.64	0.69
Comprehensive IVD Care - LDL control (<130 mg/dL)	2341	2338	78.87	12.10	80	24	100	62.86	72	88.00	94.29	78.38	79.36	15.34	0.67
Comprehensive IVD Care - LDL screen	2341	2338	86.77	11.11	88	24	100	72	80	96.00	100.00	86.32	87.23	12.80	0.73
Comprehensive IVD Care - Patient prescribed Aspirin or other antithrombotic	2341	2312	89.56	11.50	92	8.57	100	76	84	97.14	100.00	89.10	90.03	12.84	0.78

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0067 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Chronic Stable Coronary Artery Disease: Antiplatelet Therapy
De.2 **Brief description of measure**: 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
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness, Equity De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least	**B** **Y**☐

every 3 years. Yes, information provided in contact section	N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, High resource use 1a.2 1a.3 **Summary of Evidence of High Impact:** •16.3 million Americans are living with coronary heart disease – of that 16.3 million, 54% are men and 46% are women. (1) •Coronary heart disease makes up more than half of all cardiovascular events in men and women less than 75 years of age. (1) •The lifetime risk of developing coronary heart disease after age 40 is 49% for men and 32% for women. (1) •The incidence of coronary heart disease in women lags behind men by 10 years for total coronary heart disease and by 20 years for more serious clinical events such as myocardial infarction and death.(1) •Coronary heart disease caused approximately 1 of every 6 deaths in the United States in 2007. (1) •While death rates have fallen from 1968 to the present, coronary heart disease is the largest killer of men and women in the United States. (1) It has been estimated that approximately 47% of this decrease is attributed to treatments (medical and surgical), while approximately 44% is attributed to changes in risk factors. (1)	**1a** C☐ P☐ M☐ N☐

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

•In 2007, the estimated direct and indirect cost for coronary heart disease in the United States is $177.5 billion. (1)

•In 2006, coronary artery disease was the most expensive condition treated in US hospitals at a cost of $52.6 billion (2) and accounted for 5% of total hospitalization costs.(3)

•Thirty percent of Medicare's total expenditures are applied to cardiovascular disease.(4)

•In 2007, $5.2 billion was spent on outpatient visits related to chronic ischemic heart disease.(5)

1a.4 **Citations for Evidence of High Impact:** (1) Roger VL, Go AS, Lloyd-Jones DM, et al; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2011 update: a report from the American Heart Association. Circulation. 2011;123:e000–e000. Available at: http://circ.ahajournals.org/cgi/reprint/CIR.0b013e3182009701v1
(2) Andrews RM. The national hospital bill: the most expensive conditions by payer, 2006. Agency for Healthcare Research and Quality, Statistical Brief #59. 2008. Available at: http://www.hcup-us.ahrq.gov/reports/ statbriefs/ sb59.pdf.
(3) Agency for Healthcare Research and Quality. HCUP Facts and Figures, 2006: Statistics on Hospital-based Care in the United State. Available at: http://www.hcup-us.ahrq.gov/reports/factsandfigures/facts_figures_2006. jsp#ex4_2b.
(4) Centers for Medicare and Medicaid Services. Health Care Financing Review: Medicare & Medicaid Statistical Supplement. Table 10.4: Hospital Outpatient bills, covered charges, and program payments under medicare by selected reasons for the visit: calendar year 2007. Baltimore, MD: Centers for Medicare and Medicaid Services; 2008. Available at"
http://www.cms.gov.MedicareMedicaidStatSupp/downloads/2008Table10.4.pdf
(5) Trogdon JG, Finkelstein EA, Nwaise IA, Tangka FK, Orenstein D. The economic burden of chronic cardiovascular disease for major insurers. Health Promotion Practice. 2007;8(3):234-242

1b. Opportunity for Improvement

1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Improvement in the number of patients with CAD who are prescribed antiplatelet therapy.

1b.2 **Summary of data demonstrating performance gap (variation or overall poor performance) across providers:**
From 1998-2000,
- 51.4% of patients with newly diagnosed CAD received aspirin within one week of the diagnosis of the CAD
- 49.9% of patients with a prior diagnosis of CAD who were not on aspirin and who did not have contraindications to aspirin received aspirin within one week of any visit in which the CAD was addressed (2)

HealthPartners reported performance results in 2006 on their daily aspirin use measure, which is part of an optimal coronary artery disease care composite measure. 37.5% of members had all of their CAD risk factors optimally managed (LDL <100, blood pressure <140/90mmHg, daily aspirin, and documented non-tobacco use). 100% performance is not expected for this measure. HealthPartners has set a goal of 55% as excellent performance and 60% as superior performance29. Individual rates by risk factor are also reported out separately. 89.8% of members with CAD had aspirin use within the measurement year. (1)

Additional data is available in section 1 of the CAD measure testing summary.

1b.3 **Citations for data on performance gap:**
(1) HealthPartners. 2007 Clinical Indicators Report—220/2007 Results. Minneapolis, MN. 2007

(2)Technical Appendix to McGlynn EA, Asch SM, Adams JL, et al. Who is at greatest risk for receiving poor quality health care? N Engl J Med 2006;354:1147-1156. Available at http://www.rand.org/pubs/working_papers/WR-174-1. Accessed January 2008.

1b.4 **Summary of Data on disparities by population group:**
We are not aware of any publications/evidence outlining disparities in this area.

1b
C ☐
P ☐
M ☐
N ☐

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

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

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Use of antiplatelet therapy has shown to reduce the occurrence of vascular events in patients with CAD, including myocardial infarction and death.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**

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

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines*)**:**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*)**:** Aspirin should be started at 75 to 162 mg per day and continued indefinitely in all patients unless contraindicated (Class I Recommendation, Level A Evidence). (ACC/AHA, 2007)

Clopidogrel when aspirin is absolutely contraindicated (Class IIa Recommendation; Level of Evidence B). (ACC/AHA, 2002)

1c.10 Clinical Practice Guideline Citation: Fraker JD, Fihn SD, writing on behalf of the 2002 Chronic Stable Angina Writing Committee. 2007 chronic angina focused update of the ACC/AHA 2002 Guidelines for the Management of Patients with Chronic Stable Angina: a report of the American College of Cardiology/American Heart
Association Task Force on Practice Guidelines Writing Group to Develop the Focused Update of the 2002 Guidelines for the Management of Patients with Chronic Stable Angina. J Am Coll Cardiol. 2007;50:2264-2274.

Gibbons RJ, Abrams J, Chatterjee K, Daley J, Deedwania PC, Douglas JS, Ferguson TB Jr., Fihn SD, Fraker TD Jr., Gardin JM, O'Rourke RA, Pasternak RC, Williams SV. ACC/AHA 2002 guideline update for the management of patients with chronic stable angina: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1999 Guidelines for the Management of Patients with Chronic Stable Angina). 2002. Available at: www.acc.org/clinical/guidelines/stable/stable.pdf

1c.11 National Guideline Clearinghouse or other URL:

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

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**
ACC/AHA Classification of Recommendations and Levels of Evidence
Classification of Recommendations
Class I: Conditions for which there is evidence and/or general agreement that a given procedure or

1c
C ☐
P ☐
M ☐
N ☐

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s). ... [1]

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a ... [2]

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

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the ... [3]

treatment is beneficial, useful, and effective. Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment. Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy. Class IIb: Usefulness/efficacy is less well established by evidence/opinion. Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful. Level of Evidence Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses. Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies. Level of Evidence C: Only consensus 1c.14 **Rationale for using this guideline over others:** It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other healthcare providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to included documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in the quality of care.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 **Do you have a web page where current detailed measure specifications can be obtained?** S.2 **If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** 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 2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** Once during the measurement period. 2a.3 **Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** See attached for EHR Specifications. For Claims/Administrative: Report CPT II Code 4011F: Oral antiplatelet therapy prescribed	
2a.4 **Denominator Statement (***Brief, text description of the denominator - target population being measured***):** All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period 2a.5 **Target population gender:** Female, Male	**2a-specs** **C☐** **P☐** **M☐** **N☐**

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

2a.6 Target population age range: Aged 18 years and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
12 consecutive months

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):**
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, lack of drug availability, other reasons attributable to the health care system)

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

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
See attached for calculation algorithm.

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

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record, Registry data

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

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL www.pinnacleregistry.org

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment PCPI_CAD-6_AntiplateletTherapy NQF 0067.pdf

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

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Home, Ambulatory Care: Office, Ambulatory Care: Clinic, Nursing home (NH) /Skilled Nursing Facility (SNF), Ambulatory Care: Hospital Outpatient, Assisted Living, Group homes

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** Additional data is available in section 4 of the CAD measure testing summary.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
Additional data is available in section 4 of the CAD measure testing summary.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
Additional data is available in section 4 of the CAD measure testing summary.

2b
C☐ P☐ M☐ N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:**

2c.2 Analytic Method *(type of validity & rationale, method for testing)***:**
All PCPI performance measures are assessed for content validity by expert work group members during the development process. Additional input on the content validity of draft measures is obtained through a 30-day public comment period and by also soliciting comments from a panel of consumer, purchaser, and patient representatives convened by the PCPI specifically for this purpose. All comments received are reviewed by the expert work group and the measures are adjusted as needed. Other external review groups (eg, focus groups) may be convened if there are any remaining concerns related to the content validity of the measures.

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:**

2c
C☐ P☐ M☐ N☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
Additional data is available in section 5 of the CAD measure testing summary.

2d.2 Citations for Evidence:

2d
C☐ P☐ M☐ N☐ NA☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

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

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category ... [4]

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

Additional data is available in section 5 of the CAD measure testing summary. 2d.3 **Data/sample** *(description of data/sample and size)*: Additional data is available in section 5 of the CAD measure testing summary. 2d.4 **Analytic Method** *(type analysis & rationale)*: Additional data is available in section 5 of the CAD measure testing summary. 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Additional data is available in section 5 of the CAD measure testing summary.	
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: This measure does not employ the use of risk adjustment. 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: 2e.3 **Testing Results** *(risk model performance metrics)*: 2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:**	**2e** C☐ P☐ M☐ N☐ NA☐
2f. Identification of Meaningful Differences in Performance 2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: Additional data is available in section 1 of the CAD measure testing summary. 2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Additional data is available in section 1 of the CAD measure testing summary. 2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: Additional data is available in section 1 of the CAD measure testing summary.	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods 2g.1 **Data/sample** *(description of data/sample and size)*: Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary. 2g.2 **Analytic Method** *(type of analysis & rationale)*: Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary. 2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary.	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care 2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The measure is not stratified by patient groups or cohorts that could potentially be affected by disparities in care, nor are we aware of any existing research identifying disparities in care that may be relevant to this measure. 2h.**2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** We are not aware of any relevant disparities that have been identified.	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific*	**2**

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

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

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

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

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

Acceptability of Measure Properties?	
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C☐** **P☐** **M☐** **N☐**
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** This measure is not yet used in any public reporting initiative. The measure will, however, be eligible for inclusion in the CMS PQRS and other government programs in 2012 and would thus provide information about clinician participation to the public. The ACCF, AHA, and PCPI believe that the reporting of such participation information is a beneficial first step on a trajectory toward the public reporting of performance results, which is most appropriate after the measures are thoroughly tested and the reliability of the performance data has been validated. Continued NQF endorsement will facilitate our ongoing progress toward this public reporting objective. **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** All PCPI measures are suitable for use in quality improvement initiatives and are made freely available on the PCPI website and through the implementation efforts of medical specialty societies and other PCPI members. The PCPI strongly encourages the use of its measures in QI initiatives and seeks to provide information on such initiatives to PCPI members. CMS PQRI Program measure #6 2007: claims 2008: claims 2009: claims, registry 2010: claims, registry, MG The American Heart Association's Get With The Guidelines®-Outpatient (GWTG-O) is a virtual performance improvement program that will improve adherence to evidence-based care in the outpatient setting, including specialist practices, general healthcare practices and health clinics. GWTG-Outpatient historically has had a long history of quality improvement for cardiovascular care. They have published 65 publications over the past 10 years. This program is designed to assist healthcare professionals in the outpatient setting to provide the best possible care to patients. This program collects a number of clinical measures for primary and secondary prevention. Clinical measure sets include those developed by American Heart Association, including those co-developed with other organizations, such as the American College of Cardiology Foundation and the American Medical Association, as well as other National Quality Forum endorsed measures. Through this program, we collect data on clinical measures affecting a number of cardiovascular related conditions including, atrial fibrillation, coronary artery disease, heart failure, hypertension, diabetes, and preventative care. The primary analytical system used is Duke Clinical Research Institute. Get With The Guidelines®-Outpatient is a quality improvement program that can be utilized for Maintenance of Certification (MOC) with groups like American Board of Internal Medicine (ABIM) and American Board of Family Medicine (ABFM). ABIM has confirmed that the reports received from Get With The Guidelines-Outpatient can be utilized in completion of their Self-Directed Practice Improvement Module (PIM). The Self-Directed PIM provides one pathway for earning practice performance credit in ABIM's MOC program.	**3a** **C☐** **P☐** **M☐** **N☐**

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

This program includes several integral components: A preliminary Continuing Education (CE) course for the care team, data submission and reporting that is integrated with existing Electronic Health Records (EHRs)/health technology platforms, corresponding professional and provider education including webinars, online tools and resources, digital access to reference materials and videos through the Get With The Guidelines®-Outpatient website (http://outpatient.heart.org). The free continuing education activity titled, Outpatient Quality Improvement Focus, addresses the quality chasm and treatment gap, presents the benefits of quality improvement and identifies the steps necessary for implementation in the practice setting. This continuing education activity is certified for physicians, nurses and pharmacists.

The American College of Cardiology Foundation's Cardiology Practice Improvement Pathway (CPIP) uses clinical measure sets that are developed and specified by the American College of Cardiology Foundation with the American Heart Association and the American Medical Association's Physician Consortium for Performance Improvement for Hypertension, Stable Coronary Artery Disease, Heart Failure, and Atrial Fibrillation/Atrial Flutter. This program is intended as an approved quality improvement product that can be applied toward ABIM's Part IV practice performance requirement for Maintenance of Certification (ABIM AQI application submitted). They are in the process of creating a homepage on the Cardiosource.org homepage. The URL will be cardiosource.org/cpip. The web-based tool will be available after spring 2011. Through an online webinar hosted in November 2010, CPIP anticipates enrolling 50 - 100 practices during 2011 which will provide data from about 500-1,000 cardiologists. This ACCF initiative has contracted with the NY QIO: IPRO to analyze and scores based on thresholds. Of the 100 points needed to achieve recognition in the program, 70 come directly from clinical points such as the Heart Failure measures that are being submitted to NQF for consideration. IPRO will audit 5% of practices who submit their data for recognition evaluation.

The American College of Cardiology Foundation's has an Performance Improvement program entitled "A New Era" which is an educational format approved for credit by the American Medical Association (AMA) and the American Nursing Credentialing Center. This continuing medical education program blends both quality improvement and educational methodologies to provide a high quality learning experience that impacts changes to practice. These activities are structured, long-term processes in which a healthcare professional learns about the heart failure specific performance metrics, uses metrics to retrospectively assess his practice, applies these metrics prospectively over a useful interval, and reevaluates his performance. As part of this process, clinicians set goals for change and engage in structured learning activities to improve their performance. As of December 6th, 2010:
- 425 clinicians have enrolled in A New ERA
- The data is generated from all but four states (Montana, New Hampshire, South Dakota, and Wyoming)
- 82% are physicians
- 90% agreed or strongly agreed that performance metric data were valuable
- 80% agreed or strongly agreed that performance metric data review would help them improve their practice
- No one has finished the program, as it takes several months to do so

In 2008, the American College of Cardiology Foundation launched the PINNACLE program (formerly known as the Improving Continuous Cardiac Care or IC3). This was the first, national, prospective, outpatient based cardiac QI registry in the US. While participation is voluntary, this registry collects a variety of longituditional patient data at the point of service, including patients' symptoms, vital signs, medication, and recent hospitalizations. Jointly developed ACCF/AHA/PCPI measures for Coronary Artery Disease, Heart Failure, and Atrial Fibrillation. Data collection is achieved in 2 ways for the practices: paper forms or practice's electronic medical record data collection systems. The primary analytical system used is St. Luke's Mid America Heart Institute. The ACCF registry, PINNACLE, pulls data from outpatient facilities via paper flowsheets or 14 EHR vendors. As of December 10, 2010, there are 47 practices collecting data at 200 sites with 276,000 unique patients representing 1 million documented encounters.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)***:**

3a.5 Methods *(e.g., focus group, survey, QI project)***:**

3a.6 Results *(qualitative and/or quantitative results and conclusions)*:	
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** Maintenance submission of NQF #0067: Antiplatelet Therapy	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** **5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No	**4c** C☐ P☐ M☐ N☐ NA☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

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

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

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

4c.2 **If yes, provide justification.**	
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Although we are not currently aware of any unintended consequences related to this measure, we plan through an active redesign of the PCPI website to facilitate the collection of information on unintended consequences from the users of PCPI measures.	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Additional data is available in section 3 of the CAD measure testing summary. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Additional data is available in section 3 of the CAD measure testing summary. 4e.3 **Evidence for costs:** Additional data is available in section 3 of the CAD measure testing summary. 4e.4 **Business case documentation:** Additional data is available in section 3 of the CAD measure testing summary.	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y☐ N☐ A☐
CONTACT INFORMATION	
Co.1 **Measure Steward (Intellectual Property Owner)** Co.1 **Organization** American Medical Association, 515 N. State St., Chicago, Illinois, 60654 Co.2 **Point of Contact** Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-	
Measure Developer If different from Measure Steward Co.3 **Organization** American Medical Association, 515 N. State St., Chicago, Illinois, 60654 Co.4 **Point of Contact** Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-	

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

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

Co.5 Submitter If different from Measure Steward POC
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-, American Medical Association

Co.6 Additional organizations that sponsored/participated in measure development
American College of Cardiology Foundation, American Heart Association

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
Bruce Abramowitz, MD, FACC (interventional cardiology; measure implementation)
Karen Alexander, MD (cardiology; geriatrics)
Craig T. Beam, CRE (patient representative)
Robert O. Bonow, MD, MACC, FAHA, FACP (cardiology)
Jill S. Burkiewicz, PharmD, BCPS (pharmacy)
Michael Crouch, MD, MSPH (family medicine)
David C. Goff, Jr., MD, PhD, FAHA, FACP (internal medicine)
Richard Hellman, MD, FACP, FACE (endocrinology)
Thomas James, III, FACP, FAAP (health plan representative)
Marjorie L. King, MD, FACC, MAACVPR (cardiology; cardiac rehabilitation)
Edison A. Machado, Jr., MD, MBA (measure implementation)
Eduardo Ortiz, MD, MPH (guideline development)
Michael O'Toole, MD (cardiology; electrophysiology; measure implementation)
Stephen D. Persell, MD, MPH (internal medicine; measure implementation)
Jesse M. Pines, MD, MBA, MSCE, FAAEM (emergency medicine)
Frank J. Rybicki, MD, PhD (radiology)
Lawrence B. Sadwin (patient representative)
Joanna D. Sikkema, MSN, ANP-BC, FAHA (cardiology)
Peter K. Smith, MD (thoracic surgery)
Patrick J. Torcson, MD, FACP, MMM (hospital medicine)
John B. Wong MD, FACP (internal medicine)

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Ad.2 If adapted, provide name of original measure: Maintenance submission of NQF #0067: Antiplatelet Therapy
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2003
Ad.7 Month and Year of most recent revision: 05, 2009
Ad.8 What is your frequency for review/update of this measure? Every 3 years or as new evidence becomes available that materially affects the measures
Ad.9 When is the next scheduled review/update for this measure? 05, 2012

Ad.10 Copyright statement/disclaimers: This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

Ad.11 -13 Additional Information web page URL or attachment: Attachment Testing Summary CAD NQF Final_10_10-634238749833217282.pdf

Date of Submission (*MM/DD/YY*)**:** 01/20/2011

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Page 4: [2] Comment [k5] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 4: [3] Comment [k7] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 7: [4] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

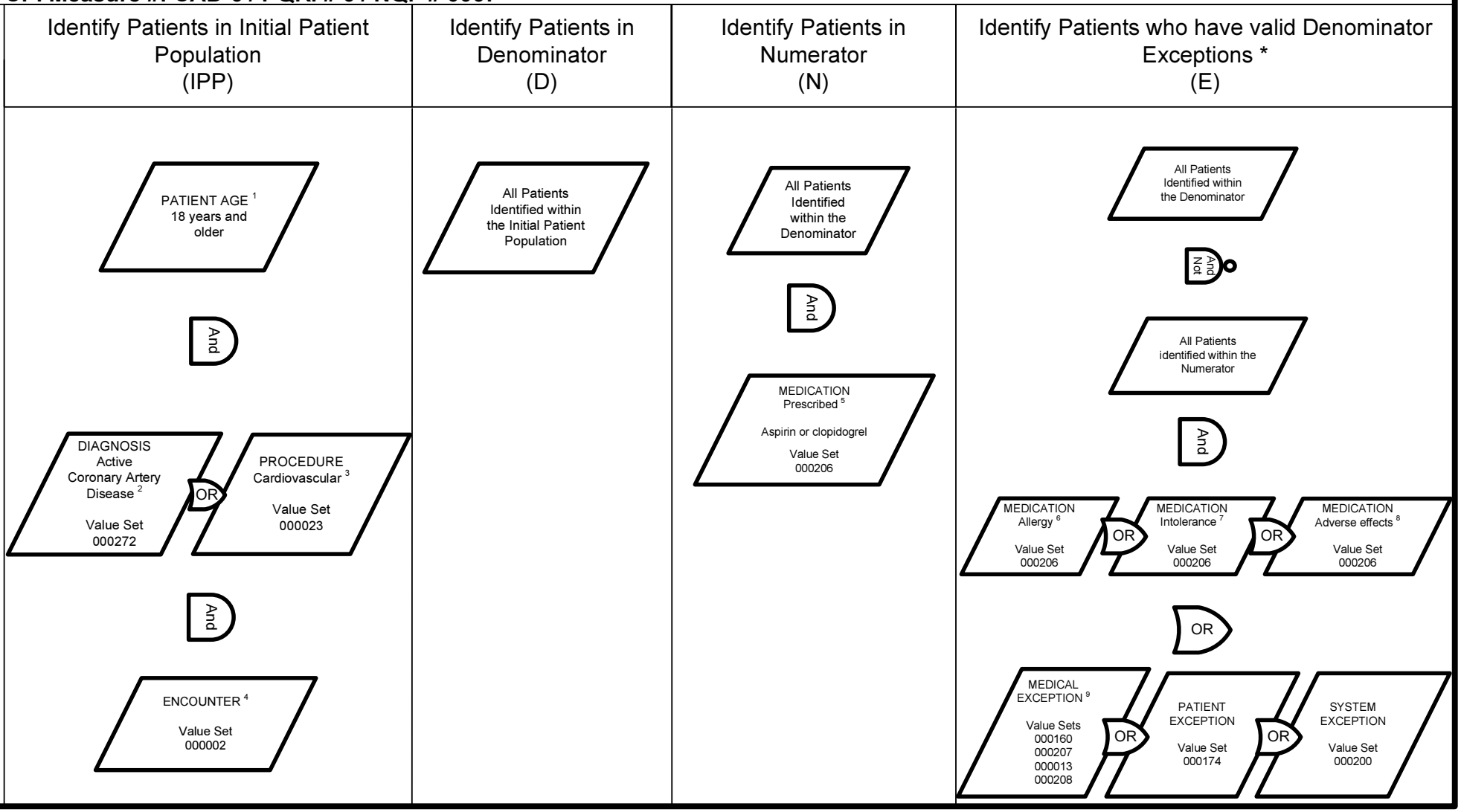
Clinical Topic	Chronic Stable Coronary Artery Disease (CAD)
Measure Title	Antiplatelet Therapy
Measure #	PCPI # CAD-6 / PQRI # 6 / NQF# 0067
Measure Description	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease who were prescribed aspirin or clopidogrel within a 12 month period
Measurement Period	Twelve consecutive months
Initial Patient Population	Patient Age: Patients aged 18 years and older before the start of measurement period Diagnosis Active: Patient has a diagnosis of coronary artery disease before or simultaneously to encounter date Encounter: At least two visits with the physician, physician's assistant, or nurse practitioner during the measurement period
Denominator Statement	All patients aged 18 years and older with a diagnosis of coronary artery disease
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
Denominator Exceptions	Documentation of medical reason(s) for not prescribing aspirin or clopidogrel (eg, allergy, intolerance, 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, lack of drug availability, other reasons attributable to the health care delivery system)

Measure Logic for Chronic Stable Coronary Artery Disease (CAD): Antiplatelet Therapy

Measure Description: Percentage of patients aged 18 years and older with a diagnosis of CAD who were prescribed aspirin or clopidogrel within a 12 month period

Measurement Period: 12 Consecutive Months

PCPI Measure #: CAD-6 / PQRI # 6 / NQF # 0067



PARAMETER SPECIFICATIONS (Value Sets are found in the Coding Appendices):

IPP: [1] Patient Age: 18 years and older before the start of measurement period; [2] Diagnosis Active: before or simultaneously to encounter date; [3] Procedure Cardiovascular: before or simultaneously to encounter date; [4] Encounter: ≥ to 2 visits during measurement period;

N: [5] Medication, Prescribed: Aspirin or clopidogrel active or ordered during the measurement period;

E: [6] Medication Allergy, [7] Medication Intolerance, [8] Medication Adverse Effects: the Value Set listed references the medications to which an allergy, intolerance, or adverse effect exist.

[9] Medical Exception: Value Set 000208 includes Thienopyridine Therapy excluding clopidogrel; Value Sets 000160, 000174, 000200 during the measurement period; all other Value Sets starts before or simultaneously to measurement period.

* Coded examples are NOT intended to be an exhaustive list. Exceptions will vary for each patient and situation.

Version 2.0

Basic Measure Calculation:

$$\frac{(N)}{(D) - (E)} = \%$$

The PCPI strongly recommends that exception rates also be computed and reported alongside performance rates as follows:

Exception Calculation:

$$\frac{(E)}{(D)} = \%$$

Exception Types:
E= E1 (Medical Exceptions) + E2 (Patient Exceptions) + E3 (System Exceptions)
For patients who have more than one valid exception, only one exception should be be counted when calculating the exception rate

Initial Patient Population (IPP)	Denominator (D)	Numerator (N)	Denominator Exceptions (E)
Definition: The initial patient population identifies the general group of patients that the performance measureis designed to address; usually focused on a specific clinical condition (e.g., coronary artery disease, asthma). For example, a patient aged 18 years and older with a diagnosis of CADwho has at least 2 Visits during the measurement period.	**Definition:** The denominator defines the specific group of patients for inclusion in a specific performance measure based on specific criteria (e.g., patient's age, diagnosis, prior MI). In some cases, the denominator may be I dentical to the initial patient population.	**Definition:** The numerator defines the group of patients in the denominator for whom a process or outcome of care occurs (e.g., flu vaccine received).	**Definition:** Denominator exceptions are the valid reasons why patients who are included in the denominator population did not receive a process or outcome of care (described in the numerator). Patients may have Denominator Exceptions for medical reasons (e.g., patient has an egg allergy so they did not receive flu vaccine); patient reasons (e.g., patient declined flu vaccine); or system reasons (e.g., patient did not receive flu Vaccine due to vaccine shortage). These cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported. This group of patients constitutes the Denominator Exception reporting population – patients for whom the numerator was not achieved and a there is a valid Denominator Exception.
Find the patients who meet the Initial Patient Population criteria (IPP)	Find the patients who qualify for the denominator (D): ○ From the patients within the Patient Population criteria (IPP) select those people who meet Denominator selection criteria. (In some cases the IPP and D are identical).	Find the patients who qualify for the Numerator (N): ○ From the patients within the Denominator (D) criteria, select those people who meet Numerator selection criteria. ○ Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator	From the patients who did not meet the Numerator criteria, determine if the patient meets any criteria for the Denominator Exception (E1 + E2+E3). If they meet any criteria, they should be removed from the Denominator for performance calculation. As a point of reference, these cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported.

AMA-PCPI Level I EHR Specification
Chronic Stable Coronary Artery Disease-Antiplatelet Therapy (CAD-6)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.00	AMI ANTEROLATERAL,UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.01	AMI ANTEROLATERAL, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.02	AMI ANTEROLATERAL,SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.10	AMI ANTERIOR WALL,UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.11	AMI ANTERIOR WALL, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.12	AMI ANTERIOR WALL,SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.20	AMI INFEROLATERAL,UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.21	AMI INFEROLATERAL, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.22	AMI INFEROLATERAL,SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.30	AMI INFEROPOST, UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.31	AMI INFEROPOST, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.32	AMI INFEROPOST, SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.40	AMI INFERIOR WALL,UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.41	AMI INFERIOR WALL, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.42	AMI INFERIOR WALL,SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.50	AMI LATERAL NEC, UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.51	AMI LATERAL NEC, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.52	AMI LATERAL NEC, SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.60	TRUE POST INFARCT,UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.61	TRUE POST INFARCT, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.62	TRUE POST INFARCT,SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.70	SUBENDO INFARCT, UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.71	SUBENDO INFARCT, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.72	SUBENDO INFARCT, SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.80	AMI OTHER SPEC SITE, UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.81	AMI OTHER SPEC SITE, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.82	AMI OTHER SPEC SITE, SUBSEQ
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.90	AMI NOS, UNSPEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.91	AMI NOS, INITIAL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.92	AMI NOS, SUBSEQUENT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.0	POST MI SYNDROME
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.1	INTERMED CORONARY SYND
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.81	ACUTE COR OCCLSN W/O MI
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.89	AC ISCHEMIC HRT DIS NEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	412	OLD MYOCARDIAL INFARCT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.0	ANGINA DECUBITUS
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.1	PRINZMETAL ANGINA
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.9	ANGINA PECTORIS NEC/NOS
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.00	COR ATH UNSPEC VESSEL NTV/GRAFT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.01	COR ATH NATVE VESSEL
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.02	COR ATH ATLG VN BPS GRAFT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.03	COR ATH NONATLG BIO GRAFT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.04	COR ATH MAMMARY ART BPS GRAFT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.05	COR ATH BPS GRAFT NOS
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.06	COR ATH NATV ART TP HRT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.07	COR ATH BPS GRAFT TP HRT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.8	CHR ISCHEMIC HRT DIS NEC
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.9	CHR ISCHEMIC HRT DIS NOS

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	V45.81	STATUS-POST AORTOCOR BPS GRAFT
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	V45.82	STATUS-POST PTCA
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.0	Unstable Angina
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.1	Angina pectoris with documented spasm
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.8	Other forms of angina pectoris, Angina equivalent
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.9	Angina pectoris, unspecified
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery/ST elevation (STEMI) myocardial infarction involving diagonal coronary artery
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall (Acute transmural myocardial infarction of anterior wall)
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.11	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Inferoposterior transmural (Q wave) infarction (acute)
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Acute transmural myocardial infarction of inferior wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.21	ST elevation (STEMI) myocardial infarction involving left circulflex coronary artery, ST elevation (STEMI) myocardial infarction involving oblique marginal coronary artery
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.29	ST elevation (STEMI) myocardial infarction involving other sites Acute transmural myocardial infarction of other sites
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.3	ST elevation (STEMI) myocardial infarction of unspecified site Acute transmural myocardial infarction of unspecified site Myocardial infarction (acute) NOS
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.4	Non-ST elevation (NSTEMI) myocardial infarction Acute subendocardial myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall/ Subsequent acute transmural myocardial infarction of anterior wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall Subsequent acute transmural myocardial infarction of inferior wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction Subsequent acute subendocardial myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites Subsequent acute transmural myocardial infarction of other sites
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site Subsequent acute myocardial infarction of unspecified site
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I23.7	Postinfarction angina
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.0	Acute coronary thrombosis not resulting in myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.1	Dressler's syndrome
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.8	Other forms of acute ischemic heart disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.9	Acute ischemic heart disease, unspecified

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.2	Old myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.5	Ischemic cardiomyopathy
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.6	Silent myocardial ischemia
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.82	Chronic total occlusion of coronary artery Complete occlusion of coronary artery Total occlusion of coronary artery
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.89	Other forms of chronic ischemic heart disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.9	Chronic ischemic heart disease, unspecified
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	Z95.1	Presence of aortocoronary bypass graft
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	Z95.5	Presence of coronary angioplasty implant and graft
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	10365005	right main coronary artery thrombosis
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	1755008	old myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	10273003	acute infarction of papillary muscle
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	15990001	acute myocardial infarction of posterolateral wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	22298006	myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	28248000	left anterior descending coronary artery thrombosis
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	29899005	coronary artery embolism
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	30277009	acute myocardial infarction with rupture of ventricle
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	32574007	past myocardial infarction diagnosed on ECG AND/OR other special investigation, but currently presenting no symptoms
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	42531007	microinfarct of heart
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	50570003	aneurysm of coronary vessels
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	52035003	acute anteroapical myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	53741008	coronary arteriosclerosis

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000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	54329005	acute myocardial infarction of anterior wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	57054005	acute myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	58612006	acute myocardial infarction of lateral wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	62695002	acute anteroseptal myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	63739005	coronary occlusion
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	65547006	acute myocardial infarction of inferolateral wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	67682002	coronary artery atheroma
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	70211005	acute myocardial infarction of anterolateral wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	70422006	acute subendocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	73795002	acute myocardial infarction of inferior wall
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	74218008	coronary artery arising from main pulmonary artery
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	75398000	anomalous origin of coronary artery
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	79009004	acute myocardial infarction of septum
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	87343002	prinzmetal angina
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	92517006	calcific coronary arteriosclerosis
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	123641001	left coronary artery occlusion
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	123642008	right coronary artery occlusion
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	129574000	postoperative myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	161502000	H/O: myocardial infarct at less than 60
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	161503005	H/O: myocardial infarct at greater than 60
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194798004	acute anteroapical infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194802003	true posterior myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194809007	acute myocardial infarction of atrium
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	194842008	single coronary vessel disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	194843003	double coronary vessel disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194856005	subsequent myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	233817007	triple vessel disease of the heart
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233835003	acute widespread myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233838001	acute posterior myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233839009	old anterior myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233840006	old inferior myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233841005	old lateral myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233842003	old posterior myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233843008	silent myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	233970002	coronary artery stenosis
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	275905002	H/O: myocardial problem
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	304914007	acute Q wave myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	307140009	acute non-Q wave infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	308065005	H/O: Myocardial infarction in last year
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	314207007	non-Q wave myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	315348000	asymptomatic coronary heart disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	371068009	myocardial infarction with complication
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371803003	multi vessel coronary artery disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371804009	left main coronary artery disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371805005	significant coronary bypass graft disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	394710008	first myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	398274000	coronary artery thrombosis
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	399211009	history of - myocardial infarction

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000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	401303003	acute ST segment elevation myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	401314000	acute non-ST segment elevation myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	408546009	coronary artery bypass graft occlusion
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	418044006	myocardial infarction in recovery phase
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	420006002	obliterative coronary artery disease
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	421327009	coronary artery stent thrombosis
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	427919004	coronary arteriosclerosis due to radiation
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	428196007	mixed myocardial ischemia and infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	428752002	recent myocardial infarction
000272	CAD	6	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	429245005	recurrent coronary arteriosclerosis after percutaneous transluminal coronary angioplasty
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33140	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33510	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33511	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33512	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33513	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33514	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33516	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33517	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33518	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33519	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33521	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33522	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33523	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33533	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33534	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33535	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	33536	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	92980	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	92981	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	92982	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	92984	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	92995	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	CPT	92996	
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	3546002	aortocoronary artery bypass graft with saphenous vein graft
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	10326007	coronary artery bypass with autogenous graft, three grafts
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	15256002	transmyocardial revascularization by laser technique
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	30670000	anastomosis of thoracic artery to coronary artery, double
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	39202005	coronary artery bypass with autogenous graft, four grafts
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	39724006	anastomosis of internal mammary artery to coronary artery, double vessel
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	48431000	anastomosis of thoracic artery to coronary artery, single
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	74371005	coronary artery bypass with autogenous graft, two grafts
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	81266008	heart revascularization
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	82247006	coronary artery bypass with autogenous graft, five grafts
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	90205004	cardiac revascularization with bypass anastomosis
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	119564002	internal mammary-coronary artery bypass graft

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	119565001	coronary artery bypass graft, anastomosis of artery of thorax to coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	174911007	revascularization of wall of heart
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175007008	saphenous vein graft replacement of one coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175008003	saphenous vein graft replacement of two coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175009006	saphenous vein graft replacement of three coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175011002	saphenous vein graft replacement of four or more coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175012009	other specified saphenous vein graft replacement of coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175021005	allograft bypass of coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175022003	allograft replacement of one coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175024002	allograft replacement of two coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175025001	allograft replacement of three coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175026000	allograft replacement of four or more coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175036008	revision of bypass for coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175037004	revision of bypass for one coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175038009	revision of bypass for two coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175039001	revision of bypass for three coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175040004	revision of bypass for four or more coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175041000	revision of connection of thoracic artery to coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175045009	connection of mammary artery to coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175047001	double implantation of mammary arteries into coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175048006	single anastomosis of mammary artery to left anterior descending coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175050003	single implantation of mammary artery into coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175053001	connection of other thoracic artery to coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	175058005	other specified connection of other thoracic artery to coronary artery
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	232717009	coronary artery bypass graft
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	232719007	coronary artery bypass graft x 1
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	232720001	coronary artery bypass grafts x 2
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	232721002	coronary artery bypass grafts x 3
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	232722009	coronary artery bypass grafts x 4
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	232723004	coronary artery bypass grafts x 5
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	232724005	coronary artery bypass grafts greater than 5
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	265481001	double anastomosis of mammary arteries to coronary arteries
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	275215001	LIMA single anastomosis
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	275216000	RIMA single anastomosis
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	275227003	myocardial revascularization
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	275252001	LIMA sequential anastomosis
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	275253006	RIMA sequential anastomosis
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	287277008	indirect heart revascularization
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	309814006	aortocoronary bypass grafting
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	359597003	single internal mammary-coronary artery bypass
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	359601003	coronary artery bypass with autogenous graft of internal mammary artery, single graft

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000023	CAD	6	IPP	Cardiac Surgery	Procedure	SNM	414088005	emergency CABG
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99201	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99202	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99203	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99204	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99205	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99212	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99213	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99214	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99215	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99241	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99242	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99243	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99244	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99245	
000002	CAD	6	IPP	Encounter Nursing Facility	Encounter	CPT	99304	
000002	CAD	6	IPP	Encounter Nursing Facility	Encounter	CPT	99305	
000002	CAD	6	IPP	Encounter Nursing Facility	Encounter	CPT	99306	
000002	CAD	6	IPP	Encounter Nursing Facility	Encounter	CPT	99307	
000002	CAD	6	IPP	Encounter Nursing Facility	Encounter	CPT	99308	
000002	CAD	6	IPP	Encounter Nursing Facility	Encounter	CPT	99309	
000002	CAD	6	IPP	Encounter Nursing Facility	Encounter	CPT	99310	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99324	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99325	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99326	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99327	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99328	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99334	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99335	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99336	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99337	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99341	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99342	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99343	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99344	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99345	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99347	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99348	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99349	
000002	CAD	6	IPP	Encounter Outpatient	Encounter	CPT	99350	
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	197374	Aspirin 800 MG Extended Release Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	198466	Aspirin 325 MG Oral Capsule
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	198467	Aspirin 325 MG Enteric Coated Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	198470	Aspirin 486 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	198471	Aspirin 500 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	198475	Aspirin 650 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	198479	Aspirin 400 MG / Caffeine 32 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	199281	Aspirin 300 MG Oral Tablet

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	206789	Aspirin 975 MG Enteric Coated Tablet [Easprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	206790	Aspirin 975 MG Enteric Coated Tablet [Entaprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	206974	Aspirin 800 MG Extended Release Tablet [Sloprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	206975	Aspirin 800 MG Extended Release Tablet [Zorprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	209468	Acetaminophen 250 MG / Aspirin 250 MG / Caffeine 65 MG Oral Tablet [Excedrin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	209470	Acetaminophen 250 MG / Aspirin 250 MG / Caffeine 65 MG Oral Tablet [Goody's Cool Orange Extra Strength]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	210864	Acetaminophen 115 MG / Aspirin 210 MG / Caffeine 16 MG / salicylamide 65 MG Oral Tablet [Saleto]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211292	Aspirin 400 MG / Caffeine 32 MG Oral Tablet [Anacin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211295	Aspirin 400 MG / Caffeine 32 MG Oral Tablet [Genasan]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211297	Aspirin 400 MG / Caffeine 32 MG Oral Tablet [P-A-C Analgesic]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211310	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Capsule [Fiorinal]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211311	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Capsule [Fiormor]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211312	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Capsule [Fiortal]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211313	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Capsule [Isollyl]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211314	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Capsule [Laniroif]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211332	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet [Butalbital Compound]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211333	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet [Fiorinal]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211334	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet [Fiormor]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211335	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet [Fiortal]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211337	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet [Idenal]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211338	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet [Isollyl]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211339	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet [Laniroif]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211822	Aspirin 162 MG Enteric Coated Tablet [Halfprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211830	Aspirin 81 MG Chewable Tablet [Med Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211832	Aspirin 81 MG Chewable Tablet [St. Joseph Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211833	Aspirin 81 MG Enteric Coated Tablet [Ascriptin Enteric]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211834	Aspirin 81 MG Enteric Coated Tablet [Ecotrin Low Strength Adult]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211835	Aspirin 81 MG Enteric Coated Tablet [Halfprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211874	Aspirin 325 MG Oral Tablet [Bayer Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211877	Aspirin 325 MG Oral Tablet [Empirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211878	Aspirin 325 MG Enteric Coated Tablet [Entercote]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211879	Aspirin 325 MG Oral Tablet [Gennin-FC]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211880	Aspirin 325 MG Oral Tablet [Genprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211881	Aspirin 325 MG Oral Tablet [Norwich Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211882	Aspirin 325 MG Oral Tablet [Ridiprin]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211884	Aspirin 325 MG Oral Tablet [Uni-Tren]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211887	Aspirin 500 MG Oral Tablet [Bayer Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211890	Aspirin 500 MG Enteric Coated Tablet [Genacote]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211891	Aspirin 500 MG Oral Tablet [Norwich Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211892	Aspirin 500 MG Oral Tablet [Valomag]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211893	Aspirin 81 MG Oral Tablet [Acuprin 81]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211898	Aspirin 81 MG Oral Tablet [Halfprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211900	Aspirin 81 MG Oral Tablet [Minitabs]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	211902	Aspirin 650 MG Oral Tablet [Bayer Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	212033	Aspirin 325 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	212085	Aspirin 325 MG Enteric Coated Tablet [Ascriptin Enteric]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	212086	Aspirin 325 MG Enteric Coated Tablet [Ecotrin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	212476	Aspirin 500 MG / Diphenhydramine 25 MG Oral Tablet [Bayer Aspirin PM Extra Strength]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	213169	clopidogrel 75 MG Oral Tablet [Plavix]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	213290	Acetaminophen 160 MG / Aspirin 230 MG / Caffeine 33 MG Oral Tablet [Supac]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	238134	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Capsule
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	238135	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	243670	Aspirin 81 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	247138	Aspirin 850 MG Oral Powder
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	260847	Aspirin 325 MG Oral Tablet [Bufferin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	260848	Aspirin 325 MG Oral Tablet [Buffex]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	260849	Aspirin 325 MG Oral Tablet [Uni-Buff]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	260851	Aspirin 325 MG Enteric Coated Tablet [Genacote]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	284282	Acetaminophen 250 MG / Aspirin 250 MG / Caffeine 65 MG Oral Tablet [Ex-Pain]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	284463	Aspirin 500 MG Enteric Coated Tablet [Ecotrin Maximum Strength]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	307677	Acetaminophen 325 MG / Aspirin 325 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308278	Acetaminophen 115 MG / Aspirin 210 MG / Caffeine 16 MG / salicylamide 65 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308281	Acetaminophen 125 MG / Aspirin 240 MG / Caffeine 32 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308297	Acetaminophen 250 MG / Aspirin 250 MG / Caffeine 65 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308363	Aspirin 325 MG / Caffeine 16 MG / salicylamide 95 MG Oral Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308409	Aspirin 500 MG Enteric Coated Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308409	Aspirin 500 MG Enteric Coated Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308409	Aspirin 500 MG Enteric Coated Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308411	Aspirin 650 MG Enteric Coated Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308412	Aspirin 650 MG Extended Release Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308413	Aspirin 65 MG Chewable Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308416	Aspirin 81 MG Enteric Coated Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308417	Aspirin 975 MG Enteric Coated Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	308418	Aspirin 975 MG Extended Release Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	318272	Aspirin 81 MG Chewable Tablet

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	387090	Aspirin 325 MG Enteric Coated Tablet [Bayer Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	404658	Aspirin 81 MG Enteric Coated Capsule [YSP Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	608696	Aspirin 500 MG / Caffeine 32 MG Oral Tablet [Anacin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	749795	Aspirin 81 MG Enteric Coated Tablet [St. Joseph Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	795728	Aspirin 488 MG Enteric Coated Tablet
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	809445	Aspirin 325 MG / butalbital 50 MG / Caffeine 40 MG Oral Tablet [Farbital]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	825178	Aspirin 81 MG / Calcium Carbonate 750 MG Oral Tablet [Bayer Aspirin Plus Calcium]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	825180	Aspirin 81 MG Chewable Tablet [Bayer Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	825181	Aspirin 81 MG Oral Tablet [Bayer Aspirin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	830525	Aspirin 500 MG Oral Tablet [Ascriptin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	830530	Aspirin 325 MG Oral Tablet [Ascriptin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	830533	Aspirin 325 MG Oral Tablet [Aspidrox]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	830538	Aspirin 325 MG Oral Tablet [Aspir-Mox]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	830541	Aspirin 325 MG Oral Tablet [Magnaprin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	830545	Acetaminophen 194 MG / Aspirin 227 MG / Caffeine 30 MG Oral Tablet [Vanquish]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	848166	Aspirin 500 MG Oral Tablet [Bufferin]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	860161	12 HR Aspirin 25 MG / Dipyridamole 200 MG Extended Release Capsule [Aggrenox]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	864026	Aspirin 5.42 MG/ML / Citric Acid 8.33 MG/ML / Sodium Bicarbonate 15.8 MG/ML Oral Solution
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	896876	Aspirin 650 MG / Caffeine 33.3 MG / salicylamide 195 MG Oral Powder [BC Powder 650/33.3/195]
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	896884	Aspirin 742 MG / Caffeine 38 MG / salicylamide 222 MG Oral Powder
000206	CAD	6	N	Antiplatelet Therapy	Medication	RxNorm	896893	Aspirin 325 MG / Caffeine 16 MG / salicylamide 95 MG Oral Tablet [BC Headache]
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	6935003	familial hemorrhagic diathesis
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	7014009	mechanical purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	9489006	factor X inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	10153004	systemic fibrinogenolysis
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	10934005	cryofibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	12501008	von Willebrand disease, type IIF
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	13172003	chronic idiopathic thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	13507004	purpura fulminans
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	13993001	factor XIII inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	16773005	drug-induced coagulation inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	19267009	lupus anticoagulant disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	19520006	von Willebrand disease, type IIB
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	21112004	vascular hemostatic disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	21148002	allergic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	21360006	spontaneous abortion with afibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	23578006	T activation syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	24663001	von Willebrand disease, type IIH
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	27068000	failed attempted abortion with afibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	27312002	high molecular weight kininogen deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	28505005	acute idiopathic thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	30182008	thrombocytopenia due to extracorporal circulation

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	30479005	legal abortion with afibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	30575002	Fanconi's anemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	31925001	hereditary factor I deficiency disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	32273002	idiopathic thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	33183004	post infectious thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	33297000	hereditary factor II deficiency disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	33820001	acquired factor X deficiency disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	34395002	thrombocytopenia due to hypothermia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	34417008	disseminated intravascular coagulation in newborn
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	34478009	failed attempted abortion with defibrination syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	35066007	von Willebrand disease, type IID
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	35509007	abortion with defibrination syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	36351005	antithrombin III deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	37193007	factor VII deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	37350004	hereditary factor X deficiency disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	37492005	sex-linked thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	38879000	factor XI inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	38970002	Doan-Wright syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	40855001	hereditary factor VII deficiency disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	41106001	von Willebrand factor inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	41690001	factor V inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	41816006	secondary cryofibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	43302000	anticoagulant overdosage
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	45366001	hereditary dysfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	46760003	Estren-Dameshek anemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	46981006	factor XII deficiency disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	47307007	factor VIII inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	47546008	warfarin overdosage
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	48788004	cyclic thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	48976006	Prekallikrein deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	49177006	postpartum coagulation defect with hemorrhage
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	49762007	hereditary factor XI deficiency disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	49886003	thrombocytopenia due to blood loss
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	50770000	spontaneous abortion with defibrination syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	51624005	Dilutional thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	52137009	von Willebrand disease, type IIE
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	53751009	senile purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	58327003	factor I inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	60628003	Mediterranean macrothrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	61802005	primary cryofibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	61810006	illegal abortion with defibrination syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	62698000	defibrination syndrome following molar AND/OR ectopic pregnancy
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	63444004	thrombocytopenia due to hypersplenism
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	64509006	acquired coagulation factor inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	64779008	BLEEDING DISORDER
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	67406007	disseminated intravascular coagulation
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	69500007	blood coagulation disorder due to liver disease

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	71723006	von Willebrand disease, type IIG
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	73162004	posttransfusion purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	73397007	heparin-induced thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	73975000	factor II deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	74576004	acquired thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	75331009	Evans syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	76407009	protein C deficiency disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	76642003	factor X deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	78129009	thrombotic thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	78345002	thrombocytopenia due to diminished platelet production
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	79624007	canine infectious cyclic thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	79674009	hyperheparinemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	80988005	mixed cryofibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	82190001	thrombocytopenia due to defective platelet production
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	85589009	radial aplasia-thrombocytopenia syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	86075001	coagulation factor deficiency syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	86635005	Kasabach-Merritt syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	87397002	von Willebrand disease, type IIA
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	87902006	thrombocytopenia due to non-immune destruction
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	89729000	factor IX inhibitor disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	91304009	capillary fragility abnormality
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	95605009	HELLP syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	95839005	disorder involving the fibrinolytic system
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	95840007	hypoplasminogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	95841006	hereditary hypoplasminogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	95842004	autosomal dominant deficiency of plasminogen
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	95843009	acquired hypoplasminogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	95844003	dysplasminogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	95845002	hereditary dysplasminogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	105604006	deficiency of naturally occurring coagulation factor inhibitor
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	111427007	abortion with afibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	111452009	postpartum afibrinogenemia with hemorrhage
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	111588002	heparin-induced thrombocytopenia with thrombosis
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	111589005	dysfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	123786007	blood coagulation disorder with shortened coagulation time
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	123787003	blood coagulation disorder with prolonged coagulation time
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	123788008	blood coagulation disorder with shortened bleeding time
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	123789000	blood coagulation disorder with prolonged bleeding time
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	123790009	blood coagulation disorder with impaired clot retraction time
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	127034005	pancytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128088003	blood coagulation disorder, categorized by value of screening test
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128090002	benign gestational thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128091003	autoimmune thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128092005	secondary autoimmune thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128093000	alloimmune thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128094006	alloimmune platelet transfusion refractoriness
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128105004	von Willebrand disorder

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000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128106003	von Willebrand disease type 1
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128107007	von Willebrand disease type 2
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128108002	von Willebrand disease type 3
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128113003	von Willebrand disease type IB
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128114009	von Willebrand disease type IC
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	128115005	pseudo von Willebrand disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	154818001	congenital afibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	180481005	anti-factor II disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	191298004	acquired factor II deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	191319009	other specified primary thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	191322006	thrombocytopenia due to drugs
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	191323001	thrombocytopenia due to extracorporeal circulation of blood
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	191324007	other specified secondary thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	198828007	afibrinogenemia following abortive pregnancy
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	198829004	defibrination syndrome following abortive pregnancy
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	200030007	postpartum coagulation defects - delivered with postnatal problem
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	200031006	postpartum coagulation defects with postnatal problem
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234367000	pancytopenia with pancreatitis
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234446004	congenital von Willebrand's disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234447008	congenital von Willebrand's disease type I
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234448003	congenital von Willebrand's disease type II
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234450006	congenital von Willebrand's disease type III
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234451005	acquired von Willebrand's disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234452003	contact factor deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234453008	Passovoy factor deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234454002	prothrombin complex deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234455001	fibrinogen abnormality
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234456000	congenital fibrinogen abnormality
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234457009	hypofibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234458004	hypodysfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234459007	alpha chain defect dysfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234460002	beta chain defect dysfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234461003	gamma chain defect dysfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234462005	acquired fibrinogen abnormality
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234464006	fibrinolytic bleeding syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234465007	Alpha-2-antiplasmin deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234466008	acquired coagulation disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234481002	essential thrombocytopenia NOS
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234482009	amegakaryocytic thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234483004	megakaryocytic thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234484005	may-Hegglin anomaly
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234485006	Epstein syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234486007	Montreal platelet syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234487003	Mediterranean thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234489000	metabolic thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	234490009	immune thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	237336007	fibrinolysis - postpartum

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000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	237337003	afibrinogenemia - postpartum
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	238787009	secondary cutaneous vasculitis
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	267272006	postpartum coagulation defects
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	267534000	primary thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	267535004	congenital thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	273986001	perinatal thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	275446004	Gardner-Diamond syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	275523003	pancytopenia-dysmelia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	278365007	anticoagulant-induced bleeding
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	278366008	anticoagulant excess without bleeding
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	278504009	afibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	282707003	acquired inhibitor of coagulation
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296926001	heparin overdose
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296927005	accidental heparin overdose
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296928000	intentional heparin overdose
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296929008	heparin overdose of undetermined intent
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296930003	coumarin overdose
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296931004	accidental coumarin overdose
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296932006	intentional coumarin overdose
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296933001	coumarin overdose of undetermined intent
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296934007	accidental warfarin overdose
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296935008	intentional warfarin sodium overdose
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	296936009	warfarin overdose of undetermined intent
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	302215000	thrombocytopenic disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	302873008	thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	307342006	thrombocytopenia due to massive blood transfusion
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	323079008	thrombocytopenia due to sequestration
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359531004	amegakaryocytic thrombocytopenia with congenital malformation
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359536009	megakaryocytic aplasia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359700009	hereditary von Willebrand disease type IA
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359704000	von Willebrand disease, type 1^a^
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359709005	von Willebrand disease type IA
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359711001	hereditary von Willebrand disease type 2A
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359714009	von Willebrand disease type 2A
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359717002	hereditary von Willebrand disease type 2B
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359721009	von Willebrand disease type 2B
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359723007	acquired hypofibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359725000	hereditary von Willebrand disease type 2M
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359727008	fibrinogen deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359729006	von Willebrand disease type 2M
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359730001	acquired afibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	359732009	von Willebrand disease type 2N
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	361209006	Dermite ocre of Favre
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	361210001	stasis purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	362970003	disorder of hemostatic system
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	371074009	radiation thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	371106008	idiopathic maternal thrombocytopenia

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000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	402653004	thrombocytopenic purpura due to defective platelet production
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	402654005	thrombocytopenic purpura due to platelet consumption
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	402850004	purpura due to prolonged vomiting and/or coughing
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	403393000	stellate pseudoscar in senile purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	415221002	purpura hemorrhagica in equine
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	416902009	uremic thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	417626001	thrombocytopenic purpura associated with metabolic disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	421766003	thrombocytopenia associated with AIDS
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	438827002	hereditary thrombophilic dysfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	439000005	hyperfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	439002002	thrombophilia due to acquired protein C deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	439125003	thrombophilia due to acquired protein S deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	439126002	thrombophilia due to acquired antithrombin III deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	439145006	congenital hypofibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	439274008	hereditary protein C deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	439699000	hereditary antithrombin III deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	439702007	hereditary protein S deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	440924009	hereditary hyperfibrinogenemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	440988005	heterozygous protein S deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	441101007	heterozygous protein C deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	441188004	homozygous protein C deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	SNM	441189007	homozygous protein S deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D47.3	Essential (hemorrhagic) thrombocythemia,Essential thromocytosis, idiopathic hemorrhagic thrombocythemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D65	Disseminated intravascular coagulation [defibrination syndrome]
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D66	Hereditary factor VIII deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D67	Hereditary factor IX deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.0	Von Willebrand's disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.1	Hereditary factor XI deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.2	Hereditary deficiency of other clotting factors
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.31	Hemorrhagic disorder due to intrinsic circulating anticoagulants
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.32	Hemorrhagic disorder due to extrinsic circulating anticoagulants
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.4	Acquired coagulation factor deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.51	Activated protein C resistance
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.52	Prothrombin gene mutation
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.59	Other primary thrombophilia Antithrombin III deficiency Hypercoagulable state NOS Primary hypercoagulable state NEC Primary thrombophilia NEC Protein C deficiency Protein S deficiency Thrombophilia NOS
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.61	Anticardiolipin syndrome Antiphospholipid syndrome

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000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.62	Lupus anticoagulant syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.69	Other thrombophilia Hypercoagulable states NEC Secondary hypercoagulable state NOS
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.8	Other specified coagulation defects
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D68.9	Coagulation defect, unspecified
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.0	Allergic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.1	Qualitative platelet defects
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.2	Other nonthrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.3	Immune thrombocytopenic purpura Hemorrhagic (thrombocytopenic) purpura Idiopathic thrombocytopenic purpura Tidal platelet dysgenesis
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.41	Evans syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.42	Congenital and hereditary thrombocytopenia purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.49	Other primary thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.5	Secondary thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.6	Thrombocytopenia, unspecified
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.8	Other specified hemorrhagic conditions
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D69.9	Hemorrhagic condition, unspecified
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D75.82	Heparin induced thrombocytopenia (HIT)
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D89.0	Polyclonal hypergammaglobulinemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	D89.1	Cryoglobulinemia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	E72.11	Homocystinuria
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I10	E72.12	Thrombotic microangiopathy
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.0	Congenital factor VIII disorder
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.1	Congenital factor IX defiiciency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.2	Congenital factor XI deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.3	Congenital deficiency of other clotting factors
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.4	von Willebrand's disease
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.5	Hemorhagic disorder due to intrinsic circulating anticoagulants
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.6	Defribination syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.7	Acquaired coagulation factor deficiency
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	286.9	Other and unspecified coagulation defects
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.0	Allergic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.1	Qualitative platelet defects
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.3	Primary thjrombocytopenia unspecified
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.31	Immune thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.32	Evans' syndrome
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.33	Coangenital and hereditary thrombocytopenic purpura
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.39	Other primary thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.4	Secondary thrombocytopenia
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.5	Thrombocytopenia, unspecified
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.8	Other specified hemorrhagic conditions
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	287.9	Unspecified hemorrhagic conditions
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	289.81	Primary hypercoagulable state
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	289.82	Secondary hypercoagulable state
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	289.84	HIT Heparin-induced thrombocytopenia

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000207	CAD	6	E	Bleeding Coagulation Disorders	Diagnosis/Condition/Problem	I9	289.9	Unspecified diseases of blood and blood-forming organs
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	21745	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	21747	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	21703	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	21704	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	22855	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	21990	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	21738	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	22259	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	21815	
000160	CAD	6	E	Medical reason	Negation Rationale	HL7	22261	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	19729	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	21741	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	21746	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	21743	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	21710	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	21708	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	22851	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	14880	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	22260	
000174	CAD	6	E	Patient reason	Negation Rationale	HL7	15985	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22168	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22169	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22165	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22166	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22167	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21493	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19731	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19730	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19733	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19735	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19734	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19736	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21744	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22024	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22023	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21706	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21709	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21707	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21732	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21706	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21731	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21733	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21728	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21729	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21730	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21734	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22867	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21735	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22866	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22865	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21568	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	21408	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22907	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22909	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22911	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22913	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22912	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22858	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22857	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	22859	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19989	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19990	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19988	
000200	CAD	6	E	System Reason	Negation Rationale	HL7	19987	
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855288	Warfarin Sodium 1 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855290	Warfarin Sodium 1 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855292	Warfarin Sodium 1 MG Oral Tablet [Jantoven]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855296	Warfarin Sodium 10 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855298	Warfarin Sodium 10 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855300	Warfarin Sodium 10 MG Oral Tablet [Jantoven]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855302	Warfarin Sodium 2 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855304	Warfarin Sodium 2 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855306	Warfarin Sodium 2 MG Oral Tablet [Jantoven]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855310	Warfarin Sodium 2 MG/ML Injectable Solution [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855312	Warfarin Sodium 2.5 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855314	Warfarin Sodium 2.5 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855316	Warfarin Sodium 2.5 MG Oral Tablet [Jantoven]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855318	Warfarin Sodium 3 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855320	Warfarin Sodium 3 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855322	Warfarin Sodium 3 MG Oral Tablet [Jantoven]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855324	Warfarin Sodium 4 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855326	Warfarin Sodium 4 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855328	Warfarin Sodium 4 MG Oral Tablet [Jantoven]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855332	Warfarin Sodium 5 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855334	Warfarin Sodium 5 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855336	Warfarin Sodium 5 MG Oral Tablet [Jantoven]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855338	Warfarin Sodium 6 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855340	Warfarin Sodium 6 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855342	Warfarin Sodium 6 MG Oral Tablet [Jantoven]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855344	Warfarin Sodium 7.5 MG Oral Tablet
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855346	Warfarin Sodium 7.5 MG Oral Tablet [Coumadin]
000013	CAD	6	E	Warfarin Therapy	Medication	RxNorm	855348	Warfarin Sodium 7.5 MG Oral Tablet [Jantoven]
000208	CAD	6	E	Thienopyridine therapy-excluding clopidogrel	Medication	RxNorm	855812	prasugrel 10 MG Oral Tablet
000208	CAD	6	E	Thienopyridine therapy-excluding clopidogrel	Medication	RxNorm	855818	prasugrel 5 MG Oral Tablet

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000208	CAD	6	E	Thienopyridine therapy-excluding clopidogrel	Medication	RxNorm	855816	Effient 10 MG Oral Tablet
000208	CAD	6	E	Thienopyridine therapy-excluding clopidogrel	Medication	RxNorm	855820	Effient 5 MG Oral Tablet
000208	CAD	6	E	Thienopyridine therapy-excluding clopidogrel	Medication	RxNorm	313406	Ticlopidine 250 MG Oral Tablet
000208	CAD	6	E	Thienopyridine therapy-excluding clopidogrel	Medication	RxNorm	208558	Ticlid 250 MG Oral Tablet

This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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PCPI Performance Measure Testing Results – Chronic Stable Coronary Artery Disease

The PCPI Testing Protocol outlines the comprehensive set of tests that should be conducted in different practice settings, using different data sources, for each performance measurement set. The PCPI recognizes that multiple testing projects will be needed to achieve the required test results for each measurement set. Moreover, testing and surveillance should be part of continued evaluation and updating of the measures.

This document presents results for the American College of Cardiology (ACC)/American Heart Association (AHA)/ PCPI Hypertension Physician Performance Measures from the CMS PQRI program, the DOQ program, a peer-reviewed study, a CAD measure pilot testing project and the Cardio-HIT project.

1. Where are the measures used and what are the documented performance rates ?

Performance rates for individual measures are found to vary across the measure reporting and testing programs. This is expected, in that the performance rates are derived from different data sources, different practice sites, and variation in both the program implementation of the measures and approaches to implementation of the measures at individual practices or by the physicians in the practice sites included in the testing project. Variation in performance rates across practice sites suggests that the measure is able to differentiate among practices. In addition, no single relatively high value of performance for a measure should be used as an indication of that measure being "topped out", and hence no longer important or meaningful to measure.

PCPI #	**NQF endorsed (#)**	**Measure**	**CMS PQRI**[1] (years, data source, performance 2007, 2008)	**DOQ-IT**[2] (performance mean)	**Persell Testing Project**[3] (performance)	**Cardio- HIT Phase II** [4](performance)
1		Blood pressure Measurement	-	86.9%	97.6%	
2		Lipid profile	#152 2009: claims, registry	83.3%	81.6%	
3	0065	Symptom and activity assessment	#196 2010: registry, MG			
4a		Smoking cessation (Queried)				
4b		Smoking cessation (Intervention)				
5	0067	Antiplatelet therapy	#6 2007: claims **72.6** % 2008: claims **69.3 %** 2009: claims, registry 2010: claims, registry, MG	82.2%	81.9%	83.95%
6	0074	Drug therapy for lowering LDL-cholesterol	#197 2010: registry, MG	50.0%	85.3%	70.91%
7	0070	Beta-blocker therapy – prior myocardial infarction	#7 2007: claims **24.1** % 2008: claims **75.8 %** 2009:, registry 2010: registry, EHR	50.0%	82.8%	69.17%
8	0066	ACE inhibitor or ARB therapy	#118 2008: claims **9.5 %** 2009: claims, registry 2010: registry	80%	85.2%	75.66%
9		Screening for diabetes				

[1] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

** Surrogate testing refers to testing measures, and the corresponding data elements (eg, numerators and denominators), that are similar to those in the PCPI measures.*

What are the reported exception rates? (# patients with valid exceptions / (# patients in denominator)

It is expected that reported exception rates will vary across measures and across the measure reporting and testing programs. This is primarily due to differences in the types of measure (eg, medications versus screening), data sources examined in testing, variation among the practice sites where the measures were implemented, and the types and number of reasons included in the measure specification (ie, medical reason, patient reason, and system reason). Any one value for a reported exception rate, in of itself, should not be interpreted as indication of gaming or patient selection behavior.

Measure	CMS PQRI[5]	Doren [6]	Cardio- HIT Phase II [7]
Blood pressure Measurement	This measure has no exceptions.		
Lipid profile	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		
Smoking cessation (Queried)	This measure has no exceptions.		
Smoking cessation (Intervention)	This measure has no exceptions.		
Antiplatelet therapy	4.2%	3.5%	4.38%
Drug therapy for lowering LDL-cholesterol	-	7.3%	8.56%
Beta-blocker therapy – prior myocardial infarction	8.1%	25.3%	14.53%
ACE inhibitor or ARB therapy	Not reported	10.1%	11.86%
Screening for diabetes	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		

[2] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

[3] Persell SD, Wright JM, Thompson JA, Kmetik KS, Baker DW. Automated review of electronic health records to assess quality of care for outpatients with Coronary Artery Disease. Arch Intern Med. 2006;166:2272-2277

[4] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

[5] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

[6] Doran T, Fullwood C, Reeves D, Gravelle H, and Roland M. Exclusion of Patients from Pay-for-Performance Targets by English Physicians. New England Journal of Medicine. July 17, 2008.

[7] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

2. Which tests have been carried out in which settings or data sources? Tests of feasibility/ implementation, reliability, validity, and unintended consequences conducted in a variety of practice settings including (eg solo practices, large practices, academic practices, safety-net practices, single- and multi-specialty groups).

Setting / Data Source	Medical Record (Gold Standard) (Paper or Electronic)	EHR Reporting	Registry	Administrative Data (single source)	Administrative Data (multiple sources)	Administrative Data Plus Clinical Data
Solo Practice						
Specialty Practice	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Safety-net practice		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Academic Setting		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Community Setting	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			

Feasibility Testing

3. How confident are we that practices can accurately collect and report these measures in a sustainable fashion?

These measures have been tested and found to be generally feasible in EHR, paper, and claims data sources. Results from a study published by Persell, the AMA-sponsored Cardio-HIT project, and the CMS Doctors' Office Quality (DOQ) IT Project, as well as use in CMS's PGP Demonstration project and EHR demonstration project revealed that the CAD measures are feasible to collect, as currently specified.

The feasibility of a PCPI performance measure/measure set refers to:

- Whether or not data are stored in a codified field
- Which clinical codes sets are utilized/available
- Where in the record the data are found
- Necessary clarifications needed to implement the measure
- Documentation of challenges to measure implementation
- The extent to which clinical practices are able to interpret measure definitions and technical specifications, and a) integrate them into existing workflows and health information systems to collect, manage, and manipulate data elements; b) compute performance measures; and c) generate performance reports within a reasonable time frame and budget.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRS, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs
Location of data (eg, problem list, medication summary) was recorded for data elements as well as whether or not the data was codified using a standard code set such as LOINC or SNOMED

- Exported de-identified patient data to a warehouse for measure calculation -- successfully completed by all sites.
- Location of exception data useful to inform EHR design, CDS design.

Results

- Each of the practice sites mapped the data elements required for each of the CAD measures to their individual EHR and determined the additional system and work flow modifications required to integrate any additional data elements needed.
- Since each practice had a unique set of data fields, individual mapping of the data elements at the practice level was required. Each EHR required the development of additional data fields in order to achieve the functionality required to query and report on all data elements for all measures.
- An interface template was developed for each practice EHR which contains the unique set of data fields, validation requirements and acceptable values associated with ACC/AHA/PCPI measures. Using the interface template, each practice queried its EHR database to compile the data elements required for each measure. To assure consistent capture of data across a disperse set of EHR systems, the interface template identifies the submission of the prescribed coding system or standardized medical vocabulary as defined per the ACC/AHA/PCPI measure.
- It was not required that each data element be sent to the data warehouse using a specific coding system or standardized coding language but rather that each site would determine what specificity of data was feasible based on the current structure of data in their EHR. The consensus of the Cardio-HIT team was to provide industry accepted coded values (as identified by HITSP) if available. Examples include LOINC coding for lab tests, ICD for diagnoses and NDC for medications.
- In cases where the EHR was unable to support a medical vocabulary, an acceptable alternative was to substitute a "Y/N" value for those fields. For example, some sites were able to capture the prescription of a medication through the use of NDC codes but other sites determined that the use of Yes/No, medication prescribed (no CPT-II codes sent for medicaitons; CPT-II codes were sent for exceptions) was more feasible.

Percent of CAD Exceptions Found in Codified Data

	Problem List	Other Structured Text	Past Medical History	Free Text Notes/ Dictation	Allergy List	Drug List	Laboratory
All 4 CAD Measures	**80**	**53%**	**50%**	**16%**	**1%**	**0%**	**0%**

Doctor's Office Quality (DOQ) Project

Data Source

National feasibility study, the CMS Doctors' Office Quality[8] (DOQ) Project

Methods

Reviewers assessed the feasibility of use of the ACC/AHA/PCPI measures in offices by performing retrospective audits of paper medical records and electronic health records

Results

Limitations to feasibility were as follows:

DENOMINATOR IDENTIFICATION:

- ICD-9 coding was not always sufficient or accurate in identifying patients with CAD
- According to the specifications, patients were not required to have an office visit specifically addressing the CAD. Therefore, many patients with CAD as a secondary diagnosis were treated for other comorbid conditions during the office visit, and consequently, care processes for CAD were not present

NUMERATOR IDENTIFICATION:

- Antiplatelet Therapy
  - Site 1: Feasible with limitations.
    - Hospitalization and Transfusion documentation was not documented in a codified manner in the EHR. Available data is in a free text format.
  - Site 2: Feasible
- Symptom and activity assessment
  - Not used in this program
- Drug therapy for lowering LDL cholesterol
  - Site 1: Feasible with limitations.
    - Information on terminal illness is not documented in any codified format
  - Site 2: Feasible
- ACE inhibitor or ARB therapy
  - Site 1: Feasible with limitations.
    - LVF access code is not available or retrievable. Intolerance of drug is not obtainable.
  - Site 2: Feasible

CMS PQRI –2008 –Claims

- Three CAD measures were included in the 2008 CMS PQRI program.
- The rate of submissions accepted as appropriately coded were (2008):
  - Antiplatelet therapy **89.18** %
  - Beta-blocker therapy – prior myocardial infarction **31.69** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **65.45** %
    - **20.21** % of submissions were rejected due to an incorrect DX code
- Denominator mismatch rates were (2008):
  - Antiplatelet therapy **10.82** %
  - Beta-blocker therapy – prior myocardial infarction **68.31** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **34.55**%
    - **20.21** % of submissions were rejected due to an incorrect DX code

[8] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

Reliability Testing

4. How confident are we that the measures accurately and consistently assess the performance of physicians providing the care assessed in the measure?

Reliability is whether two abstractors, reviewing the same data from the same data source, would come to the same conclusion as to the patient meeting the measure, not meeting the measure, or qualifying as an exception.

Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing[9]

Data Source:
Paper Medical Records
Methods
A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors
Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural)
Results
Overall reliability rate for all participating clinics was **98.1**%
Kappa statistic** for individual data elements:

- Beta blocker therapy = **1.00** *(no mismatches)*
- Diagnosis of CAD = **1.00** *(no mismatches)*
- Lipid profile = **0.98**
- Statin therapy = **0.95**
- Prior myocardial infarction = **0.91**
- Antiplatelet therapy = **0.88**
- Revascularization procedure = **0.82**

***see description of kappa statistics at end of this document for more information*

Doctor's Office Quality Pilot Project

Data Source:
2 practices sites with electronic health records
Methods
Abstractor responses were compared with "gold standard" responses determined by two abstractors familiar with the data definitions and who were responsible for abstractor training.
Results

Measure	Doctor's Office Quality (DOQ) Project
Blood pressure Measurement	48 / 48 **100** % 5 / 5 **100** %
Lipid profile	48 / 48 **100** % 3 / 5 **60** %
Antiplatelet therapy	45 / 48 **94** % 5 / 5 **100** %
Drug therapy for lowering LDL-cholesterol	48 / 48 **100** % 5 / 5 **100** %
Beta-blocker therapy – prior myocardial infarction	46 / 48 **96** % 5 / 5 **100** %
ACE inhibitor or ARB therapy	46 / 48 **96** % 4 / 5 **80** %

Measure Exceptions Validated

(and specific exception

5. Are exceptions clinically appropriate and consistently documented?

Exceptions found for these measures were clinically appropriate.

AMA PCPI Testing Project: Cardio-HIT

reasons documented to inform measure maintenance)

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs

Results

All Exceptions	Medical Reason	Clinical Contraindication	Drug Allergy	Drug Interaction	Drug Intolerance
Overall (n=753)	96.3% (95.0% - 97.7%)	52.2% (48.5% - 55.8%)	14.9% (12.3% - 17.5%)	0.8% (0.2% - 1.4%)	33.0% (28.8% - 35.6%)
Antiplatelet therapy (n=97)	99.4% (97.8% - 100.9%)	28.9% (19.9% - 37.9%)	59.7% (50.0% - 69.5%)	5.8% (1.2% - 10.5%)	5.6% (0.99% - 10.1%)
Drug therapy for lowering LDL-C (n=394)	94.9% (92.7% - 97.0%)	40.6% (35.7% - 45.4%)	6.9% (4.4% - 9.4%)	0.00% (0.0% - 0.0%)	52.5% (47.6% - 57.4%)
Beta-blocker therapy for prior MI (n=114)	99.5% (98.1% - 100.8%)	83.7% (77.0% - 90.5%)	4.4% (0.6% - 8.2%)	0.0% (0.0% - 0.0%)	11.9% (5.9% - 17.8%)
ACE inhibitor/ARB therapy (n=121)	95.8% (92.3% - 99.3%)	78.7% (71.4% - 86.0%)	14.9% (8.5% - 21.2%)	0.0% (0.0% - 0.0%)	6.4% (2.0% - 10.8%)

MEASURE EXCLUSION DOCUMENTATION

MEASURE	VERBATIM DOCUMENTATION FOR EXCLUSIONS
ACE inhibitor or ARB therapy	I am going to keep pt off of ACE inhibitor therapy at this time, given the low blood pressure, and hypertrophic myopathy.
	Left nephrectomy.
	Altace, Cough;
	Diovan 320 Mg, 1 PO qd stopped 10/22 for increased cough
	Pt is somewhat hypertensive at today's office visit, and being a diabetic, would benefit from being on an ARB (cannot take ACE inhibitors). We had stopped the Cozaar because of a cough in 2006, but pt tells me that the cough has never gone away. Pt tells me that the cough did improve somewhat after stopping the Cozaar.
	The patient has been complaining recently on dry cough. Upon questioning, seems like cough started at the time when Micardis was started. Patient advised to hold Micardis and see if this will relieve cough.
	The patient has had significant improvement in his dizziness since reduction in the Avalide dose.
	Patient has been very noncompliant with follow up unless in a nursing home and would not use Coumadin or antiarrhythmics, which needed careful and dependable follow up.
Antiplatelet therapy	Antiplatelets, Medical reason
	Aspirin, Medical reason
	Allergy: Aspirin, Medical reason
	no antiplatelets, Pt on Coumadin
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then pt can have the upcoming procedure. A daily aspirin will also be encouraged at that time.
	The patient is to follow up with Dr. ___ Gastroenterology who noted angiodysplasia in the past. She/He is no longer on NSAIDS or aspirin. Her/His H and H have trended down overtime, and she received a transfusion with return to 10 and 30 which is our goal.
	fu subdural the patient hit pt's head on concrete after a fall on March 31. Left frontal subdural hematoma was diagnosed by CT scan. 5/1 /2007. Plavix and aspirin were stopped at that time
	I think the best thing at this time is to keep her on anticoagulation so she does not develop any further embolizations, dc asa. He/She seems to be safe and is not having any falls or any other problems related to his/her visual disturbance.
	UNWILLING TO ORDER ANTIPLATELET DUE LOW PLATELETS,ELEVATED PARTIAL THOMBOBLASTIN TIME AND POSSIBLY RELATED TO HYPERSPLENISM.

Beta-blocker therapy – prior myocardial infarction	Allergies: Beta Blockers, Reynaud's
	Beta Blocker, ? coronary artery spasm; patient had an apparent myocardial injury more than 10 years ago but has normal coronary arteries. Possibly a spasm or an embolus was raised at that point. I think that may be why patient is not on a beta blocker, but I need to review the old records.
Drug therapy for lowering LDL-cholesterol	dyslipidemia discussed niacin and patient is going to think about it
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then the pt can have the upcoming procedure. Will begin anti-lipid agents after the procedure.
	She has had a fasting lipid profile done at the last visit which showed an LDL of 143, which is slightly above goal of 130. However, her HDL was 76 which is excellent. We can discuss this at the next visit.
	For coronary disease. Pt will take aspirin and Pravachol as before. in this context, Zetia is no longer medically necessary so will discontinue

Location and Codification of Exceptions

	Allergy List		Drug List	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	145	2.07%	2	0.00%
Antiplatelet Therapy	65	1.54%	1	0.00%
Drug Therapy for Lowering LDL	31	0.00%	0	0.00%
Beta-blocker Therapy for Prior MI	21	0.00%	0	0.00%
ACE/ARB Therapy	28	7.14%	1	0.00%

	Free Text Notes/Dictation		Laboratory	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	183	25.14%	88	0.00%
Antiplatelet Therapy	28	10.71%	2	0.00%
Drug Therapy for Lowering LDL	46	4.35%	85	0.00%
Beta-blocker Therapy for Prior MI	47	44.68%	0	0.00%
ACE/ARB Therapy	62	32.26%	1	0.00%

	Other Structured		Past Medical History	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	72	48.61%	44	50.00%
Antiplatelet Therapy	7	0.00%	10	40.00%
Drug Therapy for Lowering LDL	5	0.00%	3	0.00%
Beta-blocker Therapy for Prior MI	30	46.67%	22	72.73%
ACE/ARB Therapy	30	70.00%	9	22.22%

	Problem List		
Measure	# Included	% Coded	TOTAL
All CAD Measures	114	81.58%	648
Antiplatelet Therapy	13	76.92%	126
Drug Therapy for Lowering LDL	1	100.00%	171
Beta-blocker Therapy for Prior MI	71	83.10%	191
ACE/ARB Therapy	29	79.31%	160

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)		

Allergy or intolerance	61.46%	59		
Allergy List			47	0.00%
Drug List			2	0.00%
Free Text Notes/Dictation			7	0
Past Medical History			3	0.00%
GI Tract	17.87%	17		
Allergy List			2	0.00%
Assessment List			1	0.00%
Free Text Notes/Dictation			7	9.83%
H&P			1	0.00%
Past Medical History			2	59.37%
Problem List			4	71.60%
Other doc. by pract. for not prescribing therapy	10.99%	11		
Allergy List			7	25.00%
Consultation			1	0.00%
Free Text Notes/Dictation			3	0.00%
Blood	6.20%	6		
Consultation			0	0.00%
Free Text Notes/Dictation			2	25.37%
Laboratory			1	0.00%
Past Medical History			2	0.00%
Problem List			1	100.00%
End of Life Issues	0.35%	0		
H&P			0	0.00%
Hepatic Liver	3.12%	3		
Free Text Notes/Dictation			2	0.00%
Past Medical History			1	.
Problem List			1	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)	Location Count	Percent Coded at Location
Renal	65.56%	42		
Allergy List			2	100.00%
Assessment List			15	88.05%
Consultation			0	0.00%
ED note			0	0.00%
Free Text Notes/Dictation			16	67.87%
Past Medical History			2	29.61%
Problem List			6	58.62%
Allergy or intolerance	13.73%	9		
Allergy List			9	0.00%
Other doc. by pract. for not prescribing therapy	5.62%	4		
Allergy List			2	0
Free Text Notes/Dictation			2	0
Moderate or severe aortic stenosis subaortic stenosis	3.38%	2		
Consultation			0	100.00%
Echo			0	100.00%
Free Text Notes/Dictation			0	0.00%

Past Medical History			2	0.00%
Adverse reaction to ACE inhibitor or ARB therapy	2.09%	1		
Allergy List			1	0.00%
Free Text Notes/Dictation			1	0.00%
Hyperkalemia	7.70%	5		
Allergy List			2	0.00%
Free Text Notes/Dictation			3	21.31%
End of Life Issues	0.39%	0		
Free Text Notes/Dictation			0	100.00%
Hypotension	1.13%	1		
Free Text Notes/Dictation			1	0.00%
Problem List			0	100.00%
Angioedema	0.39%	0		
ED note			0	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Comparison of Data Sources

*Note: in these projects it is recommended to always compare the secondary data source to the current gold standard of manual abstraction of the medical record.

6. Is measure collection from different data sources comparable? How does automated measure calculation compare to manual measure abstraction?

Persell Published Study[10]

Data Source:

Single health system electronic health record system

Methods

Accuracy of CAD data elements was verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRS

For patients who appeared to fail the quality measure, researchers completed a manual review of each patient's electronic chart, focusing on free text and medical tests

Results

	Automated review alone	**Automated review plus manual review of free text physician notes for cases that failed quality measures**
Blood pressure Measurement	**97.6** %	**99.2** % (+1.5% change)
Lipid profile	**81.6** %	**87.5** % (+5.9% change)
Antiplatelet therapy	**81.9** %	**96.2** % (+14.3% change)
Drug therapy for lowering LDL-cholesterol	**92.5** %	**97.2** % (+ 4.7% change)
Beta-blocker therapy – prior myocardial infarction	**82.8** %	**90.3** % (+ 7.5% change)
ACE inhibitor or ARB therapy	**85.2** %	**89.3** % (+ 4.1% change)

Discrepancies between performance measures based on EHR automated review alone and those based on automated review plus manual review were due to two types of misclassification: failure to correctly identify performance of quality measures among true, eligible patients; and failure to correctly exclude patients. The rate of misclassification from both sources of error ranged from 33% (ACE inhibitor/ARB measure) to 81% (antiplatelet therapy measure) for the individual measures.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project

46,737 eligible patients

Methods

- Translated integrated measure specifications to data fields within practice EHRs
- Accuracy of CAD data elements were verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRs
- For two samples of patients, researchers completed a manual review of each patient's electronic chart
    - Sample 1: patients who appeared to fail the quality measure (did not meet numerator nor have exception)
    - Sample 2: patients who appeared to not meet the numerator and have an exception to the quality measure

Results

Performance rates calculated automatically by the data warehouse compared to the rates of performance, opportunities for improvement and misclassification rates determined with manually abstracted data samples

- Automated review alone: Overall performance for the three measures was 76.67% and varied among the measures:
    - Antiplatelet Therapy: 83.95%
    - Drug Therapy for Lowering LDL: 70.91%
    - Beta-blocker therapy for Prior MI: 69.17%
    - ACEI/ARB therapy: 75.66%
- Manual review alone: 25.37% of the cases were identified as failing to meet the measure (opportunities for improvement):
    - Antiplatelet Therapy: 48.26%
    - Drug Therapy for Lowering LDL: 7.66%
    - Beta-blocker therapy for Prior MI: 7.12%
    - ACEI/ARB therapy: 41.49%
- Discrepancies between performance measures based on EHRs automated review alone and those based on automated review plus manual review were due to two types of misclassification:
    - identify performance among true, eligible patients
    - failure to correctly exclude patients
- The overall rate of misclassification in the automatic calculation (identified from manual review) was 32.40% and varied across the measures:
    - Antiplatelet Therapy: 5.66%
    - Drug Therapy for Lowering LDL: 52.46%
    - Beta-blocker therapy for Prior MI: 60.56%
    - ACEI/ARB therapy: 11.06%

7. If automated reporting identifies a patient as meeting the measure, what likelihood is there that manual review will validate that finding?

This test has not yet been performed for this measure set.

8. Are the individual parts of the measure (numerator, denominator, exceptions) reliably calculated, as compared to the overall measure?

This test has not yet been performed for this measure set.

9. What proportion of patients that met the measure are correctly identified?

This test has not yet been performed for this measure set.

10. What proportion of patients that do not meet the measure are correctly identified?

AMA PCPI Testing Project: Cardio-HIT

Patients Automatically Identified as Exceptions	Agreement			
Measure	Mean Rate	S.E.	95% C.I.	N
All CAD Measures	92.57%	1.13%	90.26%, 94.88%	538
Antiplatelet Therapy	88.59%	3.19%	81.83%, 95.35%	99
Drug Therapy for Lowering LDL	93.85%	1.49%	90.75%, 96.96%	261
Beta-blocker Therapy for Prior MI	93.35%	2.78%	87.27%, 99.43%	80
ACE/ARB Therapy	92.53%	2.66%	86.79%, 98.26%	97

Patients Automatically Identified as Opportunities for Improvement	Agreement			
Measure	Mean Rate	S.E.	95 % C.I.	N
Coronary Artery Disease	25.37%	1.79%	21.78%, 28.96%	592
Antiplatelet Therapy	48.26%	3.62%	40.9%, 55.63%	190
Drug Therapy for Lowering LDL	7.66%	1.63%	4.26%, 11.05%	265
Beta-blocker Therapy for Prior MI	7.12%	3.48%	0%, 14.86%	55
ACE/ARB Therapy	41.49%	5.42%	30.26%, 52.73%	83

False Positive Opportunities for Improvement - Numerator Actually Met

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	31.57%	1.91%	27.74%, 35.4%	186.89	592
Antiplatelet Therapy	37.17%	3.50%	30.04%, 44.3%	70.71	190
Drug Therapy for Lowering LDL	30.95%	2.84%	25.19%, 36.71%	81.88	265
Beta-blocker Therapy for Prior MI	7.85%	3.64%	0%, 15.89%	4.29	55
ACE/ARB Therapy	36.37%	5.30%	25.38%, 47.36%	30.01	83

False Positive Opportunities for Improvement - Exceptions Actually Found, by Measure - Weighed Sample Data

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	10.66%	1.27%	8.09%, 13.23%	63.11	592
Antiplatelet Therapy	8.91%	2.07%	4.6%, 13.22%	16.95	190
Drug Therapy for Lowering LDL	8.93%	1.75%	5.31%, 12.56%	23.64	265
Beta-blocker Therapy for Prior MI	24.46%	5.81%	12.16%, 36.77%	13.38	55
ACE/ARB Therapy	11.08%	3.46%	3.7%, 18.46%	9.14	83

EHR "In Silo" Verification

Note: initially this may be of limited usefulness until EHR functionality and use progresses

11. Can EHR products reliably identify data elements and calculate these measures?

A "dummy" data set of patient data will be provided to several EHR vendors along with EHR measure specifications. The vendors will use this test file to determine if their system can reliably calculate the measures based on intended documentation patterns.

This test has not yet been performed for this measure set.

Predictive Validity	**12. Does high performance on these measures lead to better patient outcomes?** If the scientific evidence regarding the process of care is strong and widely accepted in the field, no formal evaluation of predictive validity is necessary. If the evidence is less strong, however, it is desirable to show that high performance leads to better patient outcomes. This test has not yet been performed for this measure set. Regarding hospital measures: Several articles published in 2006 and early 2007 have begun to assess the predictive validity of CMS Core Hospital Measures (acute myocardial infarction and heart failure) as they relate to short-term mortality rates.
Unintended Consequences	**13. Have monitoring and testing uncovered unexpected consequences of measurement?** Testing should be performed for anticipated unintended consequences. Unanticipated unintended consequences should be monitored for on a long term basis as they may only occur in later stages and widespread adoption. This test has not yet been performed for this measure set.
Project Descriptions	**Doctor's Office Quality Pilot Project** Data was captured at two large physician practice groups who use two distinct EHR systems. The study population of group 1 was their fee-for service Medicare patients. The study population was all non-Medicare patients for Group 2. Once the DOQ clinical measures were developed, the practices were given technical specifications to use to capture the quality measures from their EHR system. Feasibility was assessed for all measures, and some measures were implemented. **Persell Testing Project** Persell and team performed a retrospective electronic medical chart review comparing automated measurement with a 2-step process of automated measurement supplemented by review of free-text notes for apparent quality failures for all patients with CAD from a large internal medicine practice using a commercial EHR. The 7 performance measures included the following: Antiplatelet drug, lipid-lowering drug, beta-blocker following myocardial infarction, blood pressure measurement, lipid measurement, low-density lipoprotein cholesterol control, and angiotensin-converting enzyme inhibitor or angiotensin receptor blocker for patients with diabetes mellitus or left ventricular systolic dysfunction. **Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing** A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors. Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural). **Cardio-HIT Project** The AMA received funding for Phase II of the Cardio-HIT project from the Agency for Healthcare Research and Quality (AHRQ). The AMA in collaboration with five (5) physician practice sites, the Iowa Foundation for Medical Care, and the National Committee for Quality Assurance, conducted a 2-year, observational study of exception reporting, building on the prior work under *Cardio-HIT*, a research collaborative of six (6) EHRs-enabled independent group practices that collected data and reported on nationally recognized physician performance measures for coronary artery disease and heart failure. In *Cardio-HIT Phase II*, we: (1) empirically documented the prevalence and patterns of exception reporting in these measures; (2) assessed the feasibility and accuracy of exception reporting by validating a sample of reported exceptions against manual EHRs record review; and (3) analyzed and addressed stakeholder perspectives on exception reporting to refine existing principles in the design of physician performance measures**.**

Kappa Agreement	**Kappa** — **Strength of Agreement** 0.00 — Poor 0.01 – 0.20 — Slight 0.21 – 0.40 — Fair 0.41 – 0.60 — Moderate 0.61 – 0.80 — Substantial 0.81 – 0.99 — Almost perfect Landis, J.R. and Koch, G. G. (1977) "The measurement of observer agreement for categorical data" in Biometrics. Vol. 33, pp. 159—174

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0075 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** IVD: Complete Lipid Profile and LDL Control <100
De.2 **Brief description of measure***:* The percentage of members 18–75 years of age who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA) 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)
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Care coordination, Population health De.5 **IOM Quality Domain**: Effectiveness, Patient-centered De.6 **Consumer Care Need:** Getting better, Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** Proprietary measure A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of	**A** **Y**☐ **N**☐

measure submission **A.4 Measure Steward Agreement attached:**	
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** Yes, fully developed and tested **D.2 Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Leading cause of morbidity/mortality **1a.2** **1a.3 Summary of Evidence of High Impact:** Health Importance: There is general agreement in the literature that individuals with existing coronary artery disease can reduce their risk of subsequent morbidity and premature mortality by management of cholesterol levels. Total cholesterol in general and LDL level specifically, is the leading indicator for management of these patients. Treatments include limits on dietary fat and cholesterol, or in certain cases, cholesterol lowering medications. BRFSS data from 1991–2003 showed the prevalence of cholesterol screening during the preceding 5 years increased from 67.3% in 1991 to 73.1% in 2003 (CDC, 2005). Between 1988–94 and 1999–2002, the age-adjusted mean total serum cholesterol level of adults age 20 and over decreased from 206 mg/dL to 203 mg/dL and LDL cholesterol levels decreased from 129 mg/dL to 123 mg/dL. The mean level of LDL cholesterol for American adults age 20 and older is 123 mg/dL (Carroll, 2005). However, even given this decrease, there is still a significant amount of room for improvement.	**1a** C☐ P☐ M☐ N☐

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

A 10% decrease in total cholesterol levels (population wide) may result in an estimated 30% reduction in the incidence of CHD (CDC, 2000). Based on data from the Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults:

- Less than half of persons who qualify for any kind of lipid-modifying treatment for CHD risk reduction are receiving it.
- Less than half of even the highest-risk persons, those who have symptomatic CHD, are receiving lipid-lowering treatment.
- Only about a third of treated patients are achieving their LDL goal; less than 20% of CHD patients are at their LDL goal. (2002)

Several studies have shown that reducing high lipid levels will reduce cardiovascular morbidity and mortality. These studies include the Coronary Primary Prevention Trial, the Framingham Heart Study, the Oslo Study Diet and Anti-smoking Trial, the Helsinki Heart Study, the Coronary Drug Project, the Stockholm Ischemic Heart Study, the Scandinavian Simvastatin Survival Study, the West of Scotland Coronary Prevention Study, the Program on the Surgical Control of the Hyperlipidemias, and Cholesterol and Recurrent Events trial.

The evidence and support of interventions in secondary prevention of coronary artery disease was deemed to be conclusive enough that the American Heart Association and the American College of Cardiology endorsed a consensus statement on the subject (Smith, 1995). Contrary to the prevailing theory that LDL lowering is the link to improved CAD outcomes, there have been some retrospective analyses of angiographic trials which suggest that the best predictors of artherosclerotic progression and regression are baseline triglycerides, intermediate density lipoprotein (IDL), other triglyceride-rich particles, and small, dense LDL (subclass B) (Watts, 1993; Hondis, 1994; Phillips, 1987; Krauss, 1992a; Miller, 1993; Krauss, 1992b; Miller, 1994). The Journal of the American College of Cardiology writes that these analyses cite similar reductions in LDL cholesterol, but point out that the benefits of treatment were often limited to patients with high triglycerides, increased IDL and small, dense LDL. The ACC suggests additional prospective studies are needed to assess the significance of these observations (Foreester, 1996).

Financial Importance:
In 2003, the overall cost burden of CVD was estimated at $351 billion. Of this, $209 billion made up the amount allocated for healthcare expenditures (direct cost) while $142 billion was due to lost worker productivity (indirect cost) (CDC). According to the American Heart Association (AHA), the estimate for total cost burden of CVD in 2005 stands at $393.5 billion, representing a significant increase from 2003 (AHA, 2005).

1a.4 **Citations for Evidence of High Impact:** AHA/ASA Guidelines for Prevention of Stroke in Patients With Ischemic Stroke or Transient Ischemic Attack A Statement for Healthcare Professionals From the American Heart Association/American Stroke Association Council on Stroke Co-Sponsored by the Council on Cardiovascular Radiology and Intervention. The American Academy of Neurology affirms the value of this guideline. Stroke 2006;37;577-617.

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CDC/NCHS, Vital Health Stat 10. July 2005; No. 225.
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Revised August 2005. Accessed March 30, 2006.

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Centers for Disease Control and Prevention (CDC). Trends in cholesterol screening and awareness of high blood cholesterol–United States, 1991-2003. MMWR. 2005a;54;865– 870.

Executive Summary of the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). JAMA 2001;285:2486-97.

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1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Research has shown individuals with exisiting coronary artery disease can reduce their risk of subsequent morbidity and premature mortality by managing their cholestrol levels. Studies show that reducing high lipid levels will reduce cardiovascular morbidity and mortality.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
[Data collected from physician applications to the Heart/Stroke Recognition Program]

	Year	N (physicians)	N (patients)	Avg	P10	P25	P50	P75	P90
All Physicians	2005	51	1277	87.81		56	68	83	101	126
	2006	561	19053	86.17		54	66	82	99	125
	2007	842	23078	87.87	54		67	83	103	129
	2008	679	21255	86.42	53	65	81	100.8	128	
	2009	208	5386	88.04	54	67	82	103	128	

1b.3 Citations for data on performance gap:
NA

1b.4 Summary of Data on disparities by population group:
NA

1b.5 Citations for data on Disparities:
NA

1b
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N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired*

1c
C☐
P☐

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

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

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

outcome. For outcomes, describe why it is relevant to the target population): Evidence shows that individuals with existing coronary artery disease can reduce their risk of subsequent morbidity and premature mortality by management of cholesterol levels. A 10% decrease in total cholesterol levels (population wide) may result in an estimated 30% reduction in the incidence of CHD (CDC, 2000). Based on data from the Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults:

- Less than half of persons who qualify for any kind of lipid-modifying treatment for CHD risk reduction are receiving it.
- Less than half of even the highest-risk persons, those who have symptomatic CHD, are receiving lipid-lowering treatment.
- Only about a third of treated patients are achieving their LDL goal; less than 20% of CHD patients are at their LDL goal. (2002)

This measure should improve the number of people who are screened for cholesterol and subsequently receive lipid-lowering therapies.

1c.2-3. **Type of Evidence:** Evidence-based guideline, Randomized controlled trial

1c.4 **Summary of Evidence** (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Controlling high-risk patient's LDL levels has a significant impact on reducing risk of cardiovascular disease and adverse cardiac events. Given the direct impact managing cholesterol in patients with cardiovascular conditions has on clinical outcomes and healthcare costs this measure has significant strategic importance

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

1c.6 **Method for rating evidence:**

1c.7 **Summary of Controversy/Contradictory Evidence:**

1c.8 **Citations for Evidence (***other than guidelines***):**

1c.9 **Quote the Specific guideline recommendation (***including guideline number and/or page number***):**
1. Third report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). (2001) AND Implications of recent clinical trials for the National Cholesterol Education Program Adult Treatment Panel III guidelines (2004)

In high-risk persons, the recommended LDL-C goal is <100 mg/dL.

- An LDL-C goal of <70 mg/dL is a therapeutic option on the basis of available clinical trial evidence, especially for patients at very high risk.
- If LDL-C is >100 mg/dL, an LDL-lowering drug is indicated simultaneously with lifestyle changes.
- If baseline LDL-C is <100 mg/dL, institution of an LDL-lowering drug to achieve an LDL-C level <70 mg/dL is a therapeutic option on the basis of available clinical trial evidence.
- If a high-risk person has high triglycerides or low HDL-C, consideration can be given to combining a fibrate or nicotinic acid with an LDL-lowering drug. When triglycerides are >200 mg/dL, non-HDL-C is a secondary target of therapy, with a goal 30 mg/dL higher than the identified LDL-C goal.

Strength of Evidence: A1 (?)

2. Screening for lipid disorders in adults: U.S. Preventive Services Task Force recommendation statement

Screening Men
The U.S. Preventive Services Task Force (USPSTF) strongly recommends screening men aged 35 and older for lipid disorders. This is a grade A recommendation.
The USPSTF recommends screening men aged 20 to 35 for lipid disorders if they are at increased risk for

M☐
N☐

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

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

coronary heart disease. This is a grade B recommendation.
Screening Women at Increased Risk
The USPSTF strongly recommends screening women aged 45 and older for lipid disorders if they are at increased risk for coronary heart disease. This is a grade A recommendation.
The USPSTF recommends screening women aged 20 to 45 for lipid disorders if they are at increased risk for coronary heart disease. This is a grade B recommendation.

1c.10 **Clinical Practice Guideline Citation:** Grundy SM, Cleeman JI, Merz CN, Brewer HB Jr, Clark LT, Hunninghake DB, Pasternak RC, Smith SC Jr, Stone NJ. Implications of recent clinical trials for the National Cholesterol Education Program Adult Treatment Panel III guidelines. Circulation 2004 Jul 13;110(2):227-39.

National Heart, Lung, and Blood Institute, National Institutes of Health, US Department of Health and Human Services. Third report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). Bethesda (MD): U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung and Blood Institute; 2001 May. Various p.

U.S. Preventive Services Task Force. Screening for lipid disorders in adults: U.S. Preventive Services Task Force recommendation statement. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2008 Jun. 13

1c.11 **National Guideline Clearinghouse or other URL:**

1c.12 **Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):**
NCEP - A1; USPSTF - B

1c.13 **Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**
NCEP ATP III
Type of Evidence:
A. Major randomized controlled trials
B. Smaller randomized controlled trials and meta-analyses of other clinical trials
C. Observational and metabolic studies
D. Clinical experience
Strength of Evidence:
1. Very strong evidence
2. Moderately strong evidence
3. Strong trend

1c.14 **Rationale for using this guideline over others:**

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?* — **1**

Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** — **1** Y☐ N☐
Rationale:

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria) — **Eval Rating**

2a. MEASURE SPECIFICATIONS

S.1 **Do you have a web page where current detailed measure specifications can be obtained?**
S.2 **If yes, provide web page URL:**

2a. Precisely Specified — **2a-specs** C☐ P☐

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

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

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):**
Administrative Specifications:
LDL-C Screening: An LDL-C test performed any time during the measurement year, as identified by claim/encounter or automated laboratory data. Use any code listed in Table CMC-D.

The organization may use a calculated LDL for LDL-C screening and control indicators.
LDL-C ,100 mg/dL: Using automated laboratory data, the member is numerator compliant if the most recent LDL-C level during the measurement year is <100 mg/dL. The member is noncompliant if the automated result for the most recent LDL-C test is =100 mg/dL or is missing, or if an LDL-C test was not done during the measurement year.
An organization that uses CPT Category II codes to identify numerator compliance for this indicator must search for all codes in Table CDC-I and use the most recent code during the measurement year to evaluate whether the member is numerator compliant (3048F indicates the member is numerator compliant; 3049F, 3050F indicate the member is not numerator compliant).
For Hybrid and Medical Record Numerators, please see measure specifications.

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
12 months

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Table IVD-F: Codes to Identify a Complete Lipid Profile

Description	CPT	CPT Category II
Lipid panel	80061	3011F

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

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Members are identified for the eligible population in two ways: event or diagnosis.
Event/Diagnosis: The organization must use both to identify the eligible population, but a member only needs to be identified in one to be included in the measure.

Event. Discharged alive for AMI, CABG or PTCA on or between January 1 and November 1 of the year prior to the measurement year. Refer to Table CMC-A for codes to identify AMI, PTCA and CABG. AMI and CABG cases should be from inpatient claims only. All cases of PTCA should be included, regardless of setting (e.g., inpatient, outpatient, ED).

2a.5 Target population gender:
2a.6 Target population age range: 18-75 years

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
Between January 1 and November 1 of the year prior to the measurement year.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Age 18 years or older as of December 31 of the measurement year.
Patient inclusion criteria 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.

M☐
N☐

Non-health plan. 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 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

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

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Exclude patient self-report or self-monitoring, LDL to HDL ratio and findings reported on progress notes or other non-laboratory documentation.

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

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
NA

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

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
NA

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
After a measure is created, it will go through first-year analysis. This anaysis consists of a review of data completeness, national results, regional results, and eligible population and prevalence. The first-year results are compared by data collection methodology, health plan accreditation status and finally, are compared to the field test results.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
NA

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record, Lab data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
NA

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

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

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

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

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** We are conducting analyses of reliability and will provide as soon as possible.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
NA

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
NA

2b
C☐ P☐ M☐ N☐

2c. Validity testing

2c
C☐

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

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

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

2c.1 Data/sample *(description of data/sample and size)*: NA

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
NA

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
NA

P☐ M☐ N☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
NA

2d.2 Citations for Evidence:
NA

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

2d.4 Analytic Method *(type analysis & rationale)*:
NA

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

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: NA

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

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

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: NA

2e C☐ P☐ M☐ N☐ NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: NA

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
NA

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
NA

2f C☐ P☐ M☐ N☐

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)*: NA

2g.2 Analytic Method *(type of analysis & rationale)*:
NA

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

2g C☐ P☐ M☐ N☐ NA☐

2h. Disparities in Care

2h

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure ... [1]

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND ... [2]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [3]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in trea ... [4]

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage ... [5]

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

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

2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)***:** NA **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** NA	**C☐ P☐ M☐ N☐ NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties***, met?** **Rationale:**	*2* **C☐ P☐ M☐ N☐**
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** Healthcare Effectiveness Data and Information Set (HEDIS) - Health Plans and Physician Measurement **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** Quality Compass: http://www.ncqa.org/tabid/177/Default.aspx America´s Best Health Plans: http://www.ncqa.org/tabid/506/Default.aspx **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)***:** None **3a.5 Methods** *(e.g., focus group, survey, QI project)***:** NA **3a.6 Results** *(qualitative and/or quantitative results and conclusions)***:** NA	**3a** **C☐ P☐ M☐ N☐**
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** None	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** NA	**3b** **C☐ P☐ M☐ N☐ NA☐**
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** NA	**3c** **C☐ P☐ M☐**

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

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

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

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

5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality: NA	**N☐** **NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** None	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** NA **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** NA **4e.3 Evidence for costs:** NA	**4e** **C☐** **P☐** **M☐** **N☐**

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

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

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

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

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

4e.4 **Business case documentation:** NA	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION
Co.1 **Measure Steward (Intellectual Property Owner)** Co.1 **Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 Co.2 **Point of Contact** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-
Measure Developer If different from Measure Steward Co.3 **Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 Co.4 **Point of Contact** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-
Co.5 **Submitter If different from Measure Steward POC** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-, National Committee for Quality Assurance
Co.6 **Additional organizations that sponsored/participated in measure development**

ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.** NCQA follows a standard process of vetting members of measurement advisory panels for conflicts of interest.
Ad.2 **If adapted, provide name of original measure:** Ad.3-5 **If adapted, provide original specifications URL or attachment**
Measure Developer/Steward Updates and Ongoing Maintenance Ad.6 **Year the measure was first released:** Ad.7 **Month and Year of most recent revision:** 07, 2009 Ad.8 **What is your frequency for review/update of this measure?** Approximately every 3 years, sooner if the clinical guidelines have changed significantly. Ad.9 **When is the next scheduled review/update for this measure?**
Ad.10 **Copyright statement/disclaimers:**
Ad.11 -13 **Additional Information web page URL or attachment:**

Date of Submission (*MM/DD/YY*)**:** 12/31/2010

Page 11: [1] Comment [k13] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 11: [2] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

Page 11: [3] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR

rationale/data support no risk adjustment.

Page 11: [4] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 11: [5] Comment [k19] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Reliability was estimated by using the beta-binomial model. Beta-binomial is a better fit when estimating the reliability of simple pass/fail rate measures as is the case with most HEDIS® health plan measures. The beta-binomial model assumes the plan score is a binomial random variable conditional on the plan's true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates. The beta distribution can be symmetric, skewed or even U-shaped.

Reliability used here is the ratio of signal to noise. The signal in this case is the proportion of the variability in measured performance that can be explained by real differences in performance. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in performance. The higher the reliability score, the greater is the confidence with which one can distinguish the performance of one plan from another. A reliability score greater than or equal to 0.7 is considered very good.

Measure Name	N Obs	N	Mean	Std Dev	Median	Mini-mum	Maxi-mum	10th Percentile	25th Percentile	75th Percentile	90th Percentile	Lower 95% CL for Mean	Upper 95% CL for Mean	Coefficient of Variation (CV) (std/mean*100)	Beta-Binomial Reliability
Comprehensive IVD Care - BP control (<130/80)	2341	2338	44.32	14.01	44	2.86	96	28	34.29	52.00	62.50	43.75	44.89	31.61	0.62
Comprehensive IVD Care - BP control (<140/90)	2341	2338	75.14	12.46	76	24	100	60	68	84.00	91.43	74.64	75.65	16.58	0.67
Comprehensive IVD Care - BP screen	2341	2338	99.58	3.10	100	44	100	100	100	100.00	100.00	99.45	99.70	3.11	0.80
Comprehensive IVD Care - Complete lipid profile	2341	2338	86.23	11.36	88	24	100	71.43	80	96.00	100.00	85.77	86.69	13.18	0.73
Comprehensive IVD Care - LDL control (<100 mg/dL)	2341	2338	63.99	14.49	64	12	100	44	52	74.29	84.00	63.40	64.58	22.64	0.69
Comprehensive IVD Care - LDL control (<130 mg/dL)	2341	2338	78.87	12.10	80	24	100	62.86	72	88.00	94.29	78.38	79.36	15.34	0.67
Comprehensive IVD Care - LDL screen	2341	2338	86.77	11.11	88	24	100	72	80	96.00	100.00	86.32	87.23	12.80	0.73
Comprehensive IVD Care - Patient prescribed Aspirin or other antithrombotic	2341	2312	89.56	11.50	92	8.57	100	76	84	97.14	100.00	89.10	90.03	12.84	0.78

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0074 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Chronic Stable Coronary Artery Disease: Lipid Control
De.2 **Brief description of measure**: 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
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness, Equity De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, High resource use 1a.2 1a.3 **Summary of Evidence of High Impact:** •16.3 million Americans are living with coronary heart disease – of that 16.3 million, 54% are men and 46% are women. (1) •Coronary heart disease makes up more than half of all cardiovascular events in men and women less than 75 years of age. (1) •The lifetime risk of developing coronary heart disease after age 40 is 49% for men and 32% for women. (1) •The incidence of coronary heart disease in women lags behind men by 10 years for total coronary heart disease and by 20 years for more serious clinical events such as myocardial infarction and death.(1) •Coronary heart disease caused approximately 1 of every 6 deaths in the United States in 2007. (1) •While death rates have fallen from 1968 to the present, coronary heart disease is the largest killer of men and women in the United States. (1) It has been estimated that approximately 47% of this decrease is attributed to treatments (medical and surgical), while approximately 44% is attributed to changes in risk	**1a** C☐ P☐ M☐ N☐

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

factors. (1)

•In 2007, the estimated direct and indirect cost for coronary heart disease in the United States is $177.5 billion. (1)

•In 2006, coronary artery disease was the most expensive condition treated in US hospitals at a cost of $52.6 billion (2) and accounted for 5% of total hospitalization costs.(3)

•Thirty percent of Medicare's total expenditures are applied to cardiovascular disease.(4)

•In 2007, $5.2 billion was spent on outpatient visits related to chronic ischemic heart disease.(5)

1a.4 **Citations for Evidence of High Impact:** (1) Roger VL, Go AS, Lloyd-Jones DM, et al; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2011 update: a report from the American Heart Association. Circulation. 2011;123:e000–e000. Available at: http://circ.ahajournals.org/cgi/reprint/CIR.0b013e3182009701v1
(2) Andrews RM. The national hospital bill: the most expensive conditions by payer, 2006. Agency for Healthcare Research and Quality, Statistical Brief #59. 2008. Available at: http://www.hcup-us.ahrq.gov/reports/ statbriefs/ sb59.pdf.
(3) Agency for Healthcare Research and Quality. HCUP Facts and Figures, 2006: Statistics on Hospital-based Care in the United State. Available at: http://www.hcup-us.ahrq.gov/reports/factsandfigures/facts_figures_2006. jsp#ex4_2b.
(4) Centers for Medicare and Medicaid Services. Health Care Financing Review: Medicare & Medicaid Statistical Supplement. Table 10.4: Hospital Outpatient bills, covered charges, and program payments under medicare by selected reasons for the visit: calendar year 2007. Baltimore, MD: Centers for Medicare and Medicaid Services; 2008. Available at"
http://www.cms.gov.MedicareMedicaidStatSupp/downloads/2008Table10.4.pdf
(5) Trogdon JG, Finkelstein EA, Nwaise IA, Tangka FK, Orenstein D. The economic burden of chronic cardiovascular disease for major insurers. Health Promotion Practice. 2007;8(3):234-242

1b. Opportunity for Improvement

1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Improvement of lipid management and the number of patients on a statin as first line therapy.

1b.2 **Summary of data demonstrating performance gap (variation or overall poor performance) across providers:**
Performance relating to the National Committee for Quality Assurance measure of cholesterol management for patients with cardiovascular conditions shows the following for 2007 (1):

Measure
Percentage of patients 18 to 75 years of age who were discharged for acute myocardial infarction, coronary artery bypass or percutaneous transluminal coronary angioplasty, or who had a diagnosis of ischemic vascular disease who received an LDD-C screening or whose LDL-C level was controlled to <100 mg/dL.

	Commercial	Medicare	Medicaid
Cholesterol Screening Rate	88.2	87.9	76.3
Cholesterol Control Rate	58.7	55.9	38.3

HealthPartners reported performance results in 2006 on their LDL screening and control measures, which are part of an optimal coronary artery disease care composite measure. 37.5% of members had all of their CAD risk factors optimally managed (LDL <100, blood pressure <140/90mmHg, daily aspirin, and documented non-tobacco use). 100% performance is not expected for this measure. HealthPartners has set a goal of 55% as excellent performance and 60% as superior performance. Individual rates by risk factor are also reported out separately. 83.4% of members with CAD had LDL screening in the measurement year and 59.6% of member s had an LDL <100 mg/dL. (2)

1b.3 **Citations for data on performance gap:**
(1) The State of Healthcare Quality 2008. National Committee for Quality Assurance. Washington, DC. Available at: http://www.ncqa.org/tabid/836/Default.aspx.

1b
C ☐
P ☐
M ☐
N ☐

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

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

(2) HealthPartners. 2007 Clinical Indicators Report—220/2007 Results. Minneapolis, MN. 2007.

1b.4 Summary of Data on disparities by population group:
We are not aware of any publications/evidence outlining disparities in this area.

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Managing LDL-C to less than 100 mg/dL through use of statins significantly reduces risk of cardiovascular events.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**

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

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
Recommended lipid management includes assessment of a fasting lipid profile (Class I Recommendation, Level A Evidence). (ACC/AHA, 200723)
a. LDL-C should be less than 100 mg/dL (Class I Recommendation, Level A Evidence) and
b. Reduction of LDL-C to less than 70 mg/dL or high-dose statin therapy is reasonable (Class IIa Recommendation, Level A Evidence).
c. If baseline LDL-C is greater than or equal to 100 mg/dL, LDL-lowering medications are used in high-risk or moderately high-risk persons, it is recommended that intensity of the therapy be sufficient to achieve a 30% to 40% reduction in LDL-C levels (Class I Recommendation, Level A Evidence).
d. If on-treatment LDL-C is greater than or equal to 100 mg/dL, LDL-lowering therapy should be intensified (Class I Recommendation, Level A Evidence).
e. If baseline LDL-C is 70 to 100 mg/dL, it is reasonable to treat LDL-C to less than 70 mg/dL (Class IIa Recommendation, Level B Evidence).

Statins should be considered as first-line drugs when LDL-lowering drugs are indicated to achieve LDL treatment goals. (The Third Report of the National Cholesterol Education Program [NCEP] Adult Treatment Panel III [ATPII], 2002)

1c.10 Clinical Practice Guideline Citation: Fraker JD, Fihn SD, writing on behalf of the 2002 Chronic Stable Angina Writing Committee. 2007 chronic angina focused update of the ACC/AHA 2002 Guidelines for the Management of Patients with Chronic Stable Angina: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines Writing Group to Develop the Focused Update of the 2002 Guidelines for the Management of Patients with Chronic Stable Angina. J Am Coll Cardiol. 2007;50:2264-2274.

National Cholesterol Education Program, National Heart, Lung, and Blood Institute, National Institutes of Health. Third report of the National Cholesterol Education Program (NCEP) Expert Panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel II). NIH Publication No. 02-5212. September 2002.

1c
C ☐
P ☐
M ☐
N ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

1c.11 National Guideline Clearinghouse or other URL:	
1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**	
1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:** ACC/AHA Classification of Recommendations and Levels of Evidence Classification of Recommendations Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective. Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment. Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy. Class IIb: Usefulness/efficacy is less well established by evidence/opinion. Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful. Level of Evidence Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses. Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies. Level of Evidence C: Only consensus NHLBI/ATP III - Not ranked	
1c.14 Rationale for using this guideline over others: It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other healthcare providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to included documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in the quality of care.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** 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:	**2a-specs** **C☐** **P☐** **M☐** **N☐**

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

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

*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.

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**

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

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Aged 18 years and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
12 consecutive months

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)

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

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative:
Documentation of medical reason(s) for not prescribing a statin (eg, allergy, intolerance to statin

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

medication(s), other medical reasons)
• 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)

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
See attached for calculation algorithm.

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

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL www.pinnacleregistry.org

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment PCPI_CAD-2_LipidControl NQF 0074.pdf

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

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Home, Ambulatory Care: Office, Ambulatory Care: Clinic, Nursing home (NH) /Skilled Nursing Facility (SNF), Ambulatory Care: Hospital Outpatient, Assisted Living, Group homes

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 **Data/sample** *(description of data/sample and size)*: Additional data is available in section 1 of the CAD measure testing summary.

2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)*:
Additional data is available in section 1 of the CAD measure testing summary.

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Additional data is available in section 1 of the CAD measure testing summary.

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)*:

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*:
All PCPI performance measures are assessed for content validity by expert work group members during the development process. Additional input on the content validity of draft measures is obtained through a 30-day public comment period and by also soliciting comments from a panel of consumer, purchaser, and patient representatives convened by the PCPI specifically for this purpose. All comments received are reviewed by the expert work group and the measures are adjusted as needed. Other external review groups (eg, focus groups) may be convened if there are any remaining concerns related to the content validity of the measures.

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:

2c
C☐
P☐
M☐
N☐

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**
Additional data is available in section 5 of the CAD measure testing summary.

2d.2 **Citations for Evidence:**
Additional data is available in section 5 of the CAD measure testing summary.

2d.3 **Data/sample** *(description of data/sample and size)*: Additional data is available in section 5 of the CAD measure testing summary.

2d.4 **Analytic Method** *(type analysis & rationale)*:
Additional data is available in section 5 of the CAD measure testing summary.

2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*:
Additional data is available in section 5 of the CAD measure testing summary.

2d
C☐
P☐
M☐
N☐
NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*: This measure does not employ the use of risk adjustment.

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

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

2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:**

2e
C☐
P☐
M☐
N☐
NA☐

2f. Identification of Meaningful Differences in Performance

2f

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure ... [2]

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND ... [3]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [4]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in trea ... [5]

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

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: Additional data is available in section 1 of the CAD measure testing summary. **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Additional data is available in section 1 of the CAD measure testing summary. **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: Additional data is available in section 1 of the CAD measure testing summary.	C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: Additional data is available in section 6 of the CAD measure testing summary. **2g.2 Analytic Method** *(type of analysis & rationale)*: Additional data is available in section 6 of the CAD measure testing summary. **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: Additional data is available in section 6 of the CAD measure testing summary.	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The measure is not stratified by patient groups or cohorts that could potentially be affected by disparities in care, nor are we aware of any existing research identifying disparities in care that may be relevant to this measure. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** We are not aware of any relevant disparities that have been identified.	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): This measure is not yet used in any public reporting initiative. The measure will, however, be eligible for inclusion in the CMS PQRS and other government programs in 2012 and would thus provide information about clinician participation to the public. The ACCF, AHA, and PCPI believe that the reporting of such participation information is a beneficial first step on a trajectory toward the public reporting of performance results, which is most appropriate after the measures are thoroughly tested and the reliability of the performance data has been validated. Continued NQF endorsement will facilitate our ongoing progress toward this public reporting objective.	**3a** C☐ P☐ M☐ N☐

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

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

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

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

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**

All PCPI measures are suitable for use in quality improvement initiatives and are made freely available on the PCPI website and through the implementation efforts of medical specialty societies and other PCPI members. The PCPI strongly encourages the use of its measures in QI initiatives and seeks to provide information on such initiatives to PCPI members.

The American Heart Association's Get With The Guidelines®-Outpatient (GWTG-O) is a virtual performance improvement program that will improve adherence to evidence-based care in the outpatient setting, including specialist practices, general healthcare practices and health clinics. GWTG-Outpatient historically has had a long history of quality improvement for cardiovascular care. They have published 65 publications over the past 10 years. This program is designed to assist healthcare professionals in the outpatient setting to provide the best possible care to patients. This program collects a number of clinical measures for primary and secondary prevention. Clinical measure sets include those developed by American Heart Association, including those co-developed with other organizations, such as the American College of Cardiology Foundation and the American Medical Association, as well as other National Quality Forum endorsed measures.

Through this program, we collect data on clinical measures affecting a number of cardiovascular related conditions including, atrial fibrillation, coronary artery disease, heart failure, hypertension, diabetes, and preventative care. The primary analytical system used is Duke Clinical Research Institute. Get With The Guidelines®-Outpatient is a quality improvement program that can be utilized for Maintenance of Certification (MOC) with groups like American Board of Internal Medicine (ABIM) and American Board of Family Medicine (ABFM). ABIM has confirmed that the reports received from Get With The Guidelines-Outpatient can be utilized in completion of their Self-Directed Practice Improvement Module (PIM). The Self-Directed PIM provides one pathway for earning practice performance credit in ABIM's MOC program. This program includes several integral components: A preliminary Continuing Education (CE) course for the care team, data submission and reporting that is integrated with existing Electronic Health Records (EHRs)/health technology platforms, corresponding professional and provider education including webinars, online tools and resources, digital access to reference materials and videos through the Get With The Guidelines®-Outpatient website (http://outpatient.heart.org). The free continuing education activity titled, Outpatient Quality Improvement Focus, addresses the quality chasm and treatment gap, presents the benefits of quality improvement and identifies the steps necessary for implementation in the practice setting. This continuing education activity is certified for physicians, nurses and pharmacists.

The American College of Cardiology Foundation's Cardiology Practice Improvement Pathway (CPIP) uses clinical measure sets that are developed and specified by the American College of Cardiology Foundation with the American Heart Association and the American Medical Association's Physician Consortium for Performance Improvement for Hypertension, Stable Coronary Artery Disease, Heart Failure, and Atrial Fibrillation/Atrial Flutter. This program is intended as an approved quality improvement product that can be applied toward ABIM's Part IV practice performance requirement for Maintenance of Certification (ABIM AQI application submitted). They are in the process of creating a homepage on the Cardiosource.org homepage. The URL will be cardiosource.org/cpip. The web-based tool will be available after spring 2011. Through an online webinar hosted in November 2010, CPIP anticipates enrolling 50 - 100 practices during 2011 which will provide data from about 500-1,000 cardiologists. This ACCF initiative has contracted with the NY QIO: IPRO to analyze and scores based on thresholds. Of the 100 points needed to achieve recognition in the program, 70 come directly from clinical points such as the Heart Failure measures that are being submitted to NQF for consideration. IPRO will audit 5% of practices who submit their data for recognition evaluation.

The American College of Cardiology Foundation's has an Performance Improvement program entitled "A New Era" which is an educational format approved for credit by the American Medical Association (AMA) and the American Nursing Credentialing Center. This continuing medical education program blends both quality improvement and educational methodologies to provide a high quality learning experience that impacts changes to practice. These activities are structured, long-term processes in which a healthcare professional learns about the heart failure specific performance metrics, uses metrics to retrospectively assess his

practice, applies these metrics prospectively over a useful interval, and reevaluates his performance. As part of this process, clinicians set goals for change and engage in structured learning activities to improve their performance. As of December 6th, 2010:
- 425 clinicians have enrolled in A New ERA
- The data is generated from all but four states (Montana, New Hampshire, South Dakota, and Wyoming)
- 82% are physicians
- 90% agreed or strongly agreed that performance metric data were valuable
- 80% agreed or strongly agreed that performance metric data review would help them improve their practice
- No one has finished the program, as it takes several months to do so

In 2008, the American College of Cardiology Foundation launched the PINNACLE program (formerly known as the Improving Continuous Cardiac Care or IC3). This was the first, national, prospective, outpatient based cardiac QI registry in the US. While participation is voluntary, this registry collects a variety of longituditional patient data at the point of service, including patients' symptoms, vital signs, medication, and recent hospitalizations. Jointly developed ACCF/AHA/PCPI measures for Coronary Artery Disease, Heart Failure, and Atrial Fibrillation. Data collection is achieved in 2 ways for the practices: paper forms or practice's electronic medical record data collection systems. The primary analytical system used is St. Luke's Mid America Heart Institute. The ACCF registry, PINNACLE, pulls data from outpatient facilities via paper flowsheets or 14 EHR vendors. As of December 10, 2010, there are 47 practices collecting data at 200 sites with 276,000 unique patients representing 1 million documented encounters.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)*:

3a.5 Methods *(e.g., focus group, survey, QI project)*:

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

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

3b.1 NQF # and Title of similar or related measures:
Maintenance submission of NQF #0074: Drug Therapy for Lowering LDL-Cholesterol

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 Are the measure specifications harmonized? If not, why?

3b C☐ P☐ M☐ N☐ NA☐

3c. Distinctive or Additive Value
3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:

5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:

3c C☐ P☐ M☐ N☐ NA☐

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

3

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

3 C☐ P☐

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

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

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

	M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	4a C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	4b C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	4c C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Although we are not currently aware of any unintended consequences related to this measure, we plan through an active redesign of the PCPI website to facilitate the collection of information on unintended consequences from the users of PCPI measures.	4d C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Costs to implement the measure have not been calculated. 4e.3 **Evidence for costs:** 4e.4 **Business case documentation:**	4e C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	4
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?**	4

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

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

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

Rationale:	**C☐ P☐ M☐ N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐ N☐ A☐**

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.2 **Point of Contact**
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Measure Developer If different from Measure Steward
Co.3 **Organization**
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.4 **Point of Contact**
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Co.5 **Submitter If different from Measure Steward POC**
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-, American Medical Association

Co.6 **Additional organizations that sponsored/participated in measure development**
American College of Cardiology Foundation, American Heart Association

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
Bruce Abramowitz, MD, FACC (interventional cardiology; measure implementation)
Karen Alexander, MD (cardiology; geriatrics)
Craig T. Beam, CRE (patient representative)
Robert O. Bonow, MD, MACC, FAHA, FACP (cardiology)
Jill S. Burkiewicz, PharmD, BCPS (pharmacy)
Michael Crouch, MD, MSPH (family medicine)
David C. Goff, Jr., MD, PhD, FAHA, FACP (internal medicine)
Richard Hellman, MD, FACP, FACE (endocrinology)
Thomas James, III, FACP, FAAP (health plan representative)
Marjorie L. King, MD, FACC, MAACVPR (cardiology; cardiac rehabilitation)
Edison A. Machado, Jr., MD, MBA (measure implementation)
Eduardo Ortiz, MD, MPH (guideline development)
Michael O'Toole, MD (cardiology; electrophysiology; measure implementation)
Stephen D. Persell, MD, MPH (internal medicine; measure implementation)
Jesse M. Pines, MD, MBA, MSCE, FAAEM (emergency medicine)
Frank J. Rybicki, MD, PhD (radiology)
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Joanna D. Sikkema, MSN, ANP-BC, FAHA (cardiology)
Peter K. Smith, MD (thoracic surgery)
Patrick J. Torcson, MD, FACP, MMM (hospital medicine)
John B. Wong MD, FACP (internal medicine)

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty
or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Ad.2 **If adapted, provide name of original measure:** Maintenance submission of NQF #0074: Drug Therapy for Lowering LDL-Cholesterol
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2003
Ad.7 **Month and Year of most recent revision:** 05, 2009
Ad.8 **What is your frequency for review/update of this measure?** Every 3 years or as new evidence becomes available that materially affects the measures
Ad.9 **When is the next scheduled review/update for this measure?** 05, 2012

Ad.10 **Copyright statement/disclaimers:** This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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Ad.11 -13 **Additional Information web page URL or attachment:** Attachment Testing Summary CAD NQF Final_10_10-634238750084618705.pdf

Date of Submission (*MM/DD/YY*)**:** 01/20/2011

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Page 8: [2] Comment [k13] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 8: [3] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

Page 8: [4] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR

rationale/data support no risk adjustment.

Page 8: [5] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of

Clinical Topic	Chronic Stable Coronary Artery Disease (CAD)
Measure Title	Lipid Control
Measure #	PCPI # CAD-2 / PQRI # 197 / NQF # 0074
Measure Description	Percentage of patients aged 18 and older with a diagnosis of CAD who have a documented LDL-C < 100 mg/dL OR patients who have a LDL-C ≥ 100 mg/dL and have a documented plan of care to achieve LDL-C < 100 mg/dL, including at a minimum the prescription of a statin within a 12 month period
Measurement Period	Twelve consecutive months
Initial Patient Population	Patient Age: Patients aged 18 years and older before the start of measurement period Diagnosis Active: Patient has a diagnosis of coronary artery disease before or simultaneously to encounter date Encounter: At least two visits with the physician, physician's assistant, or nurse practitioner during the measurement period
Denominator Statement	All patients aged 18 years and older with a diagnosis of coronary artery disease
Numerator Statement	Patients who have a documented LDL-C < 100 mg/dL OR Patients who have an LDL-C ≥ 100 mg/dL and have a documented plan of care* to achieve LDL-C < 100 mg/dL, including at a minimum the prescription of a statin within a 12 month period *report number of patients for each numerator component separately AND a total* *Documented Plan of Care: may also include documentation of discussion of lifestyle modifications (diet, exercise); scheduled re-assessment of LDL-C 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.
Denominator Exceptions	Documentation of medical reason(s) for not prescribing statin therapy (eg, allergy, intolerance to statin medication(s), other medical reasons) Documentation of patient reason(s) for not prescribing statin therapy (eg, patient declined, other patient reasons) Documentation of system reason(s) for not prescribing statin therapy (eg, financial reasons, other reasons attributable to the health care delivery system)

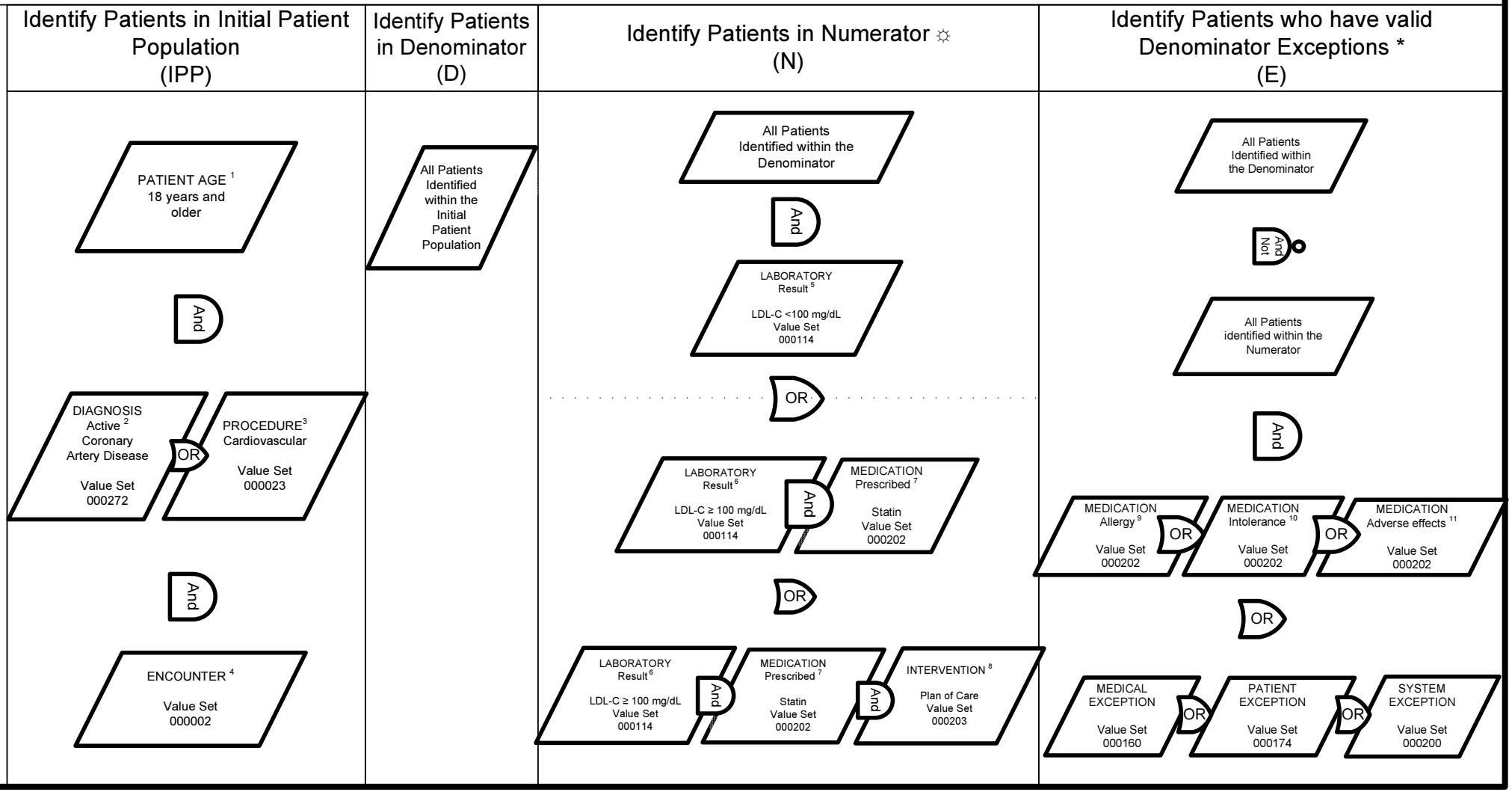
AMA - PCPI Level I EHR Specifications

Measure Logic for Chronic Stable Coronary Artery Disease (CAD): Lipid Control

Measure Description: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease who have a documented LDL-C <100mg/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 at a minimum the prescription of a statin within a 12 month period

Measurement Period: 12 Consecutive Months

PCPI Measure #: CAD-2 / PQRI # 197 / NQF #0074



PARAMETER SPECIFICATIONS (Value Sets are found in the Coding Appendices):

IPP: [1] Patient Age: 18 years and older before the start of measurement period; [2] Diagnosis, Active: before or simultaneously to encounter date; [3] Procedure Cardiovascular: before or simultaneously to encounter date; [4] Encounter: ≥ to 2 visits during measurement period

N: [5] [6] Laboratory Result: most recent LDL-C before or simultaneously to measurement period; [5] Laboratory Result: LDL-C <100 mg/dL; [6] Laboratory Result: LDL-C ≥ 100 mg/dL; [7] Medication, Prescribed: statin active or ordered during the measurement period; [8] Intervention, Plan of Care: to include at a minimum, order of a statin during the measurement period, may also include documentation of discussion of lifestyle modifications (diet, exercise) or re-assessment of LDL-C;

E: [9] Medication Allergy, [10] Intolerance, or [11] Adverse Effect: the value sets listed reference the medications to which an allergy, intolerance, or adverse effect exist; Value Sets 000160, 000174, 000200, during the measurement period; all other Value Sets starts before or simultaneously to measurement period.

☼ Both (N) components (LDL-C < 100 mg/dL AND LCL-C ≥ 100 mg/dL with appropriate plan of care) should be reported separately in addition to the TOTAL (N)

* Coded examples are NOT intended to be an exhaustive list. Exceptions will vary for each patient and situation.

Version 2.0

Basic Measure Calculation:

$$\frac{(N)}{(D) - (E)} = \%$$

The PCPI strongly recommends that exception rates also be computed and reported alongside performance rates as follows:

Exception Calculation:

$$\frac{(E)}{(D)} = \%$$

Exception Types:
E= E1 (Medical Exceptions) + E2 (Patient Exceptions) + E3 (System Exceptions)
For patients who have more than one valid exception, only one exception should be be counted when calculating the exception rate

Initial Patient Population (IPP)	Denominator (D)	Numerator (N)	Denominator Exceptions (E)
Definition: The initial patient population identifies the general group of patients that the performance measureis designed to address; usually focused on a specific clinical condition (e.g., coronary artery disease, asthma). For example, a patient aged 18 years and older with a diagnosis of CADwho has at least 2 Visits during the measurement period.	**Definition:** The denominator defines the specific group of patients for inclusion in a specific performance measure based on specific criteria (e.g., patient's age, diagnosis, prior MI). In some cases, the denominator may be I dentical to the initial patient population.	**Definition:** The numerator defines the group of patients in the denominator for whom a process or outcome of care occurs (e.g., flu vaccine received).	**Definition:** Denominator exceptions are the valid reasons why patients who are included in the denominator population did not receive a process or outcome of care (described in the numerator). Patients may have Denominator Exceptions for medical reasons (e.g., patient has an egg allergy so they did not receive flu vaccine); patient reasons (e.g., patient declined flu vaccine); or system reasons (e.g., patient did not receive flu Vaccine due to vaccine shortage). These cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported. This group of patients constitutes the Denominator Exception reporting population – patients for whom the numerator was not achieved and a there is a valid Denominator Exception.
Find the patients who meet the Initial Patient Population criteria (IPP)	Find the patients who qualify for the denominator (D): ○ From the patients within the Patient Population criteria (IPP) select those people who meet Denominator selection criteria. (In some cases the IPP and D are identical).	Find the patients who qualify for the Numerator (N): ○ From the patients within the Denominator (D) criteria, select those people who meet Numerator selection criteria. ○ Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator	From the patients who did not meet the Numerator criteria, determine if the patient meets any criteria for the Denominator Exception (E1 + E2+E3). If they meet any criteria, they should be removed from the Denominator for performance calculation. As a point of reference, these cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported.

AMA-PCPI Level I EHR Specification
Chronic Stable Coronary Artery Disease-Lipid Control (CAD-2)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.00	AMI ANTEROLATERAL,UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.01	AMI ANTEROLATERAL, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.02	AMI ANTEROLATERAL,SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.10	AMI ANTERIOR WALL,UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.11	AMI ANTERIOR WALL, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.12	AMI ANTERIOR WALL,SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.20	AMI INFEROLATERAL,UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.21	AMI INFEROLATERAL, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.22	AMI INFEROLATERAL,SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.30	AMI INFEROPOST, UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.31	AMI INFEROPOST, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.32	AMI INFEROPOST, SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.40	AMI INFERIOR WALL,UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.41	AMI INFERIOR WALL, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.42	AMI INFERIOR WALL,SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.50	AMI LATERAL NEC, UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.51	AMI LATERAL NEC, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.52	AMI LATERAL NEC, SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.60	TRUE POST INFARCT,UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.61	TRUE POST INFARCT, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.62	TRUE POST INFARCT,SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.70	SUBENDO INFARCT, UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.71	SUBENDO INFARCT, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.72	SUBENDO INFARCT, SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.80	AMI OTHER SPEC SITE, UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.81	AMI OTHER SPEC SITE, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.82	AMI OTHER SPEC SITE, SUBSEQ
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.90	AMI NOS, UNSPEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.91	AMI NOS, INITIAL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.92	AMI NOS, SUBSEQUENT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.0	POST MI SYNDROME
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.1	INTERMED CORONARY SYND
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.81	ACUTE COR OCCLSN W/O MI
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.89	AC ISCHEMIC HRT DIS NEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	412	OLD MYOCARDIAL INFARCT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.0	ANGINA DECUBITUS
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.1	PRINZMETAL ANGINA
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.9	ANGINA PECTORIS NEC/NOS
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.00	COR ATH UNSPEC VESSEL NTV/GRAFT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.01	COR ATH NATVE VESSEL
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.02	COR ATH ATLG VN BPS GRAFT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.03	COR ATH NONATLG BIO GRAFT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.04	COR ATH MAMMARY ART BPS GRAFT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.05	COR ATH BPS GRAFT NOS
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.06	COR ATH NATV ART TP HRT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.07	COR ATH BPS GRAFT TP HRT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.8	CHR ISCHEMIC HRT DIS NEC
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.9	CHR ISCHEMIC HRT DIS NOS
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	V45.81	STATUS-POST AORTOCOR BPS GRAFT
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	V45.82	STATUS-POST PTCA
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.0	Unstable Angina
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.1	Angina pectoris with documented spasm
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.8	Other forms of angina pectoris, Angina equivalent

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.9	Angina pectoris, unspecified
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery/ST elevation (STEMI) myocardial infarction involving diagonal coronary artery
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall (Acute transmural myocardial infarction of anterior wall)
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.11	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Inferoposterior transmural (Q wave) infarction (acute)
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Acute transmural myocardial infarction of inferior wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.21	ST elevation (STEMI) myocardial infarction involving left circulflex coronary artery, ST elevation (STEMI) myocardial infarction involving oblique marginal coronary artery
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.29	ST elevation (STEMI) myocardial infarction involving other sites Acute transmural myocardial infarction of other sites
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.3	ST elevation (STEMI) myocardial infarction of unspecified site Acute transmural myocardial infarction of unspecified site Myocardial infarction (acute) NOS
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.4	Non-ST elevation (NSTEMI) myocardial infarction Acute subendocardial myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall/ Subsequent acute transmural myocardial infarction of anterior wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall Subsequent acute transmural myocardial infarction of inferior wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction Subsequent acute subendocardial myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites Subsequent acute transmural myocardial infarction of other sites
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site Subsequent acute myocardial infarction of unspecified site
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I23.7	Postinfarction angina
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.0	Acute coronary thrombosis not resulting in myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.1	Dressler's syndrome
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.8	Other forms of acute ischemic heart disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.9	Acute ischemic heart disease, unspecified
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm

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000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.2	Old myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.5	Ischemic cardiomyopathy
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.6	Silent myocardial ischemia
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina

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000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.82	Chronic total occlusion of coronary artery Complete occlusion of coronary artery Total occlusion of coronary artery
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.89	Other forms of chronic ischemic heart disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.9	Chronic ischemic heart disease, unspecified
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	Z95.1	Presence of aortocoronary bypass graft
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	Z95.5	Presence of coronary angioplasty implant and graft
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	10365005	right main coronary artery thrombosis
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	1755008	old myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	10273003	acute infarction of papillary muscle
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	15990001	acute myocardial infarction of posterolateral wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	22298006	myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	28248000	left anterior descending coronary artery thrombosis
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	29899005	coronary artery embolism
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	30277009	acute myocardial infarction with rupture of ventricle
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	32574007	past myocardial infarction diagnosed on ECG AND/OR other special investigation, but currently presenting no symptoms
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	42531007	microinfarct of heart
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	50570003	aneurysm of coronary vessels
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	52035003	acute anteroapical myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	53741008	coronary arteriosclerosis
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	54329005	acute myocardial infarction of anterior wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	57054005	acute myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	58612006	acute myocardial infarction of lateral wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	62695002	acute anteroseptal myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	63739005	coronary occlusion
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	65547006	acute myocardial infarction of inferolateral wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	67682002	coronary artery atheroma

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000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	70211005	acute myocardial infarction of anterolateral wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	70422006	acute subendocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	73795002	acute myocardial infarction of inferior wall
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	74218008	coronary artery arising from main pulmonary artery
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	75398000	anomalous origin of coronary artery
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	79009004	acute myocardial infarction of septum
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	87343002	prinzmetal angina
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	92517006	calcific coronary arteriosclerosis
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	123641001	left coronary artery occlusion
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	123642008	right coronary artery occlusion
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	129574000	postoperative myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	161502000	H/O: myocardial infarct at less than 60
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	161503005	H/O: myocardial infarct at greater than 60
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194798004	acute anteroapical infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194802003	true posterior myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194809007	acute myocardial infarction of atrium
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	194842008	single coronary vessel disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	194843003	double coronary vessel disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194856005	subsequent myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	233817007	triple vessel disease of the heart
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233835003	acute widespread myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233838001	acute posterior myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233839009	old anterior myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233840006	old inferior myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233841005	old lateral myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233842003	old posterior myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233843008	silent myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	233970002	coronary artery stenosis
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	275905002	H/O: myocardial problem
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	304914007	acute Q wave myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	307140009	acute non-Q wave infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	308065005	H/O: Myocardial infarction in last year
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	314207007	non-Q wave myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	315348000	asymptomatic coronary heart disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	371068009	myocardial infarction with complication
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371803003	multi vessel coronary artery disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371804009	left main coronary artery disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371805005	significant coronary bypass graft disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	394710008	first myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	398274000	coronary artery thrombosis
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	399211009	history of - myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	401303003	acute ST segment elevation myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	401314000	acute non-ST segment elevation myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	408546009	coronary artery bypass graft occlusion
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	418044006	myocardial infarction in recovery phase
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	420006002	obliterative coronary artery disease
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	421327009	coronary artery stent thrombosis
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	427919004	coronary arteriosclerosis due to radiation

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000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	428196007	mixed myocardial ischemia and infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	428752002	recent myocardial infarction
000272	CAD	2	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	429245005	recurrent coronary arteriosclerosis after percutaneous transluminal coronary angioplasty
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33140	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33510	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33511	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33512	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33513	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33514	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33516	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33517	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33518	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33519	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33521	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33522	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33523	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33533	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33534	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33535	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	33536	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	92980	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	92981	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	92982	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	92984	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	92995	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	CPT	92996	
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	3546002	aortocoronary artery bypass graft with saphenous vein graft
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	10326007	coronary artery bypass with autogenous graft, three grafts
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	15256002	transmyocardial revascularization by laser technique
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	30670000	anastomosis of thoracic artery to coronary artery, double
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	39202005	coronary artery bypass with autogenous graft, four grafts
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	39724006	anastomosis of internal mammary artery to coronary artery, double vessel
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	48431000	anastomosis of thoracic artery to coronary artery, single
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	74371005	coronary artery bypass with autogenous graft, two grafts
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	81266008	heart revascularization
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	82247006	coronary artery bypass with autogenous graft, five grafts
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	90205004	cardiac revascularization with bypass anastomosis
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	119564002	internal mammary-coronary artery bypass graft
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	119565001	coronary artery bypass graft, anastomosis of artery of thorax to coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	174911007	revascularization of wall of heart
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175007008	saphenous vein graft replacement of one coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175008003	saphenous vein graft replacement of two coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175009006	saphenous vein graft replacement of three coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175011002	saphenous vein graft replacement of four or more coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175012009	other specified saphenous vein graft replacement of coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175021005	allograft bypass of coronary artery

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000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175022003	allograft replacement of one coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175024002	allograft replacement of two coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175025001	allograft replacement of three coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175026000	allograft replacement of four or more coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175036008	revision of bypass for coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175037004	revision of bypass for one coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175038009	revision of bypass for two coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175039001	revision of bypass for three coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175040004	revision of bypass for four or more coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175041000	revision of connection of thoracic artery to coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175045009	connection of mammary artery to coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175047001	double implantation of mammary arteries into coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175048006	single anastomosis of mammary artery to left anterior descending coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175050003	single implantation of mammary artery into coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175053001	connection of other thoracic artery to coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	175058005	other specified connection of other thoracic artery to coronary artery
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	232717009	coronary artery bypass graft
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	232719007	coronary artery bypass graft x 1
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	232720001	coronary artery bypass grafts x 2
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	232721002	coronary artery bypass grafts x 3
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	232722009	coronary artery bypass grafts x 4
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	232723004	coronary artery bypass grafts x 5
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	232724005	coronary artery bypass grafts greater than 5
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	265481001	double anastomosis of mammary arteries to coronary arteries
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	275215001	LIMA single anastomosis
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	275216000	RIMA single anastomosis
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	275227003	myocardial revascularization
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	275252001	LIMA sequential anastomosis
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	275253006	RIMA sequential anastomosis
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	287277008	indirect heart revascularization
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	309814006	aortocoronary bypass grafting
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	359597003	single internal mammary-coronary artery bypass
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	359601003	coronary artery bypass with autogenous graft of internal mammary artery, single graft
000023	CAD	2	IPP	Cardiac Surgery	Procedure	SNM	414088005	emergency CABG
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99201	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99202	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99203	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99204	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99205	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99212	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99213	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99214	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99215	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99241	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99242	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99243	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99244	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99245	
000002	CAD	2	IPP	Encounter Nursing Facility	Encounter	CPT	99304	
000002	CAD	2	IPP	Encounter Nursing Facility	Encounter	CPT	99305	
000002	CAD	2	IPP	Encounter Nursing Facility	Encounter	CPT	99306	
000002	CAD	2	IPP	Encounter Nursing Facility	Encounter	CPT	99307	
000002	CAD	2	IPP	Encounter Nursing Facility	Encounter	CPT	99308	
000002	CAD	2	IPP	Encounter Nursing Facility	Encounter	CPT	99309	
000002	CAD	2	IPP	Encounter Nursing Facility	Encounter	CPT	99310	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99324	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99325	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99326	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99327	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99328	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99334	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99335	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99336	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99337	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99341	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99342	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99343	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99344	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99345	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99347	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99348	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99349	
000002	CAD	2	IPP	Encounter Outpatient	Encounter	CPT	99350	
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	13457-7	CALCULATED LDL IN MG/DL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	18262-6	DIRECTLY MEASURED LDL IN MG/DL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	18261-8	LDL AFTER ULTRACENTRIFUGATION IN MG/DL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	2089-1	LDL CHOLESTEROL, NO METHOD, MG/DL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	12773-8	LDLC SERPI ELPH-ACNC
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	22748-8	LDLC SER PL-SCNC
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	24331-1	LIPID HCFA 96 PNL SERPL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	39469-2	LDLC SERPL CALC-SCNC
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	13458-5	CHOLESTEROL.IN VLDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	14155-6	CHOLESTEROL.IN LDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	16615-7	CHOLESTEROL.TOTAL/CHOLESTEROL.IN LDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	16616-5	CHOLESTEROL.IN HDL/CHOLESTEROL.IN LDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	2090-9	CHOLESTEROL.IN LDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	2091-7	CHOLESTEROL.IN VLDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	2092-5	CHOLESTEROL.IN VLDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	25371-6	CHOLESTEROL.IN VLDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	3047-8	TRIGLYCERIDE+ESTER.IN VLDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	3046-0	TRIGLYCERIDE+ESTER.IN LDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	35198-1	CHOLESTEROL.IN LDL
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	35199-9	CHOLESTEROL.IN VLDL

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	39229-0	LIPID SCREEN TEST STATUS
000114	CAD	2	N	LDL Laboratory Test	Laboratory Test	LN	2569-2	LIPIDS
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	762669	{30 (Aspirin 325 MG Oral Tablet) / 30 (Pravastatin 20 MG Oral Tablet [Pravachol]) } Pack [Pravigard 325/20]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	762665	{30 (Aspirin 325 MG Oral Tablet) / 30 (Pravastatin 40 MG Oral Tablet [Pravachol]) } Pack [Pravigard 325/40]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	762900	{30 (Aspirin 325 MG Oral Tablet) / 30 (Pravastatin 80 MG Oral Tablet [Pravachol]) } Pack [Pravigard 325/80]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	762902	{30 (Aspirin 81 MG Oral Tablet) / 30 (Pravastatin 20 MG Oral Tablet [Pravachol]) } Pack [Pravigard 81/20]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	762904	{30 (Aspirin 81 MG Oral Tablet) / 30 (Pravastatin 40 MG Oral Tablet [Pravachol]) } Pack [Pravigard 81/40]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	762906	{30 (Aspirin 81 MG Oral Tablet) / 30 (Pravastatin 80 MG Oral Tablet [Pravachol]) } Pack [Pravigard 81/80]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	687048	24 HR fluvastatin 80 MG Extended Release Tablet [Lescol]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	791834	24 HR Lovastatin 20 MG / Niacin 1000 MG Extended Release Tablet [Advicor 1000/20]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	791838	24 HR Lovastatin 20 MG / Niacin 500 MG Extended Release Tablet [Advicor 500/20]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	791842	24 HR Lovastatin 20 MG / Niacin 750 MG Extended Release Tablet [Advicor 750/20]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	884383	24 HR Lovastatin 60 MG Extended Release Tablet [Altoprev]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750199	Amlodipine 10 MG / atorvastatin 10 MG Oral Tablet [Caduet 10/10]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750203	Amlodipine 10 MG / atorvastatin 20 MG Oral Tablet [Caduet 10/20]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750207	Amlodipine 10 MG / atorvastatin 40 MG Oral Tablet [Caduet 10/40]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750211	Amlodipine 10 MG / atorvastatin 80 MG Oral Tablet [Caduet 10/80]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750223	Amlodipine 2.5 MG / atorvastatin 10 MG Oral Tablet [Caduet 2.5/10]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750219	Amlodipine 2.5 MG / atorvastatin 20 MG Oral Tablet [Caduet 2.5/20]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750215	Amlodipine 2.5 MG / atorvastatin 40 MG Oral Tablet [Caduet 2.5/40]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750227	Amlodipine 5 MG / atorvastatin 10 MG Oral Tablet [Caduet 5/10]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750231	Amlodipine 5 MG / atorvastatin 20 MG Oral Tablet [Caduet 5/20]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750235	Amlodipine 5 MG / atorvastatin 40 MG Oral Tablet [Caduet 5/40]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	750239	Amlodipine 5 MG / atorvastatin 80 MG Oral Tablet [Caduet 5/80]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	617314	atorvastatin 10 MG Oral Tablet [Lipitor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	617318	atorvastatin 20 MG Oral Tablet [Lipitor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	617320	atorvastatin 40 MG Oral Tablet [Lipitor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	262095	atorvastatin 80 MG Oral Tablet [Lipitor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	543350	ezetimibe 10 MG / Simvastatin 10 MG Oral Tablet [Vytorin]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	543352	ezetimibe 10 MG / Simvastatin 20 MG Oral Tablet [Vytorin]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	543354	ezetimibe 10 MG / Simvastatin 40 MG Oral Tablet [Vytorin]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	543374	ezetimibe 10 MG / Simvastatin 80 MG Oral Tablet [Vytorin]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	103918	fluvastatin 20 MG Oral Capsule [Lescol]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	103919	fluvastatin 40 MG Oral Capsule [Lescol]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	541844	Lovastatin 10 MG Extended Release Tablet [Altoprev]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	197903	Lovastatin 10 MG Oral Tablet
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	209013	Lovastatin 10 MG Oral Tablet [Mevacor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	404403	Lovastatin 20 MG Extended Release Tablet [Altocor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	541846	Lovastatin 20 MG Extended Release Tablet [Altoprev]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	197904	Lovastatin 20 MG Oral Tablet
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	206257	Lovastatin 20 MG Oral Tablet [Mevacor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	352231	Lovastatin 40 MG Extended Release Tablet [Altocor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	542191	Lovastatin 40 MG Extended Release Tablet [Altoprev]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	197905	Lovastatin 40 MG Oral Tablet
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	206258	Lovastatin 40 MG Oral Tablet [Mevacor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	352232	Lovastatin 60 MG Extended Release Tablet [Altocor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	208972	Pravastatin 10 MG Oral Tablet [Pravachol]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	208973	Pravastatin 20 MG Oral Tablet [Pravachol]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	208974	Pravastatin 40 MG Oral Tablet [Pravachol]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	352088	Pravastatin 80 MG Oral Tablet [Pravachol]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	859749	Rosuvastatin calcium 10 MG Oral Tablet [Crestor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	859753	Rosuvastatin calcium 20 MG Oral Tablet [Crestor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	859421	Rosuvastatin calcium 40 MG Oral Tablet [Crestor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	859426	Rosuvastatin calcium 5 MG Oral Tablet [Crestor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	104490	Simvastatin 10 MG Oral Tablet [Zocor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	104491	Simvastatin 20 MG Oral Tablet [Zocor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	152923	Simvastatin 40 MG Oral Tablet [Zocor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	208220	Simvastatin 5 MG Oral Tablet [Zocor]
000202	CAD	2	N	Statin Therapy	Medication	RxNorm	213319	Simvastatin 80 MG Oral Tablet [Zocor]
000203	CAD	2	N	Plan of Care to Lower LDL	Intervention	SNM	424753004	dietary management education, guidance, and counseling
000203	CAD	2	N	Plan of Care to Lower LDL	Intervention	SNM	223488008	discussion about changes in lifestyle
000203	CAD	2	N	Plan of Care to Lower LDL	Intervention	SNM	443288003	lifestyle education regarding diet
000203	CAD	2	N	Plan of Care to Lower LDL	Intervention	SNM	183062005	low cholesterol diet education
000203	CAD	2	N	Plan of Care to Lower LDL	Intervention	SNM	304507003	exercise education
000203	CAD	2	N	Plan of Care to Lower LDL	Intervention	SNM	386463000	prescribed activity/exercise education
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	21745	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	21747	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	21703	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	21704	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	22855	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	21990	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	21738	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	22259	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	21815	
000160	CAD	2	E	Medical reason	Negation Rationale	HL7	22261	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	19729	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	21741	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	21746	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	21743	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	21710	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	21708	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	22851	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	14880	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	22260	
000174	CAD	2	E	Patient reason	Negation Rationale	HL7	15985	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22168	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22169	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22165	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22166	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22167	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21493	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19731	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19730	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19733	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19735	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19734	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19736	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21744	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22024	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22023	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21706	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21709	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21707	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21732	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21706	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21731	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21733	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21728	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21729	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21730	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21734	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22867	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21735	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22866	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22865	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21568	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	21408	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22907	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22909	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22911	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22913	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22912	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22858	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22857	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	22859	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19989	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19990	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19988	
000200	CAD	2	E	System Reason	Negation Rationale	HL7	19987	

PCPI Performance Measure Testing Results – Chronic Stable Coronary Artery Disease

The PCPI Testing Protocol outlines the comprehensive set of tests that should be conducted in different practice settings, using different data sources, for each performance measurement set. The PCPI recognizes that multiple testing projects will be needed to achieve the required test results for each measurement set. Moreover, testing and surveillance should be part of continued evaluation and updating of the measures.

This document presents results for the American College of Cardiology (ACC)/American Heart Association (AHA)/ PCPI Hypertension Physician Performance Measures from the CMS PQRI program, the DOQ program, a peer-reviewed study, a CAD measure pilot testing project and the Cardio-HIT project.

1. Where are the measures used and what are the documented performance rates ?

Performance rates for individual measures are found to vary across the measure reporting and testing programs. This is expected, in that the performance rates are derived from different data sources, different practice sites, and variation in both the program implementation of the measures and approaches to implementation of the measures at individual practices or by the physicians in the practice sites included in the testing project. Variation in performance rates across practice sites suggests that the measure is able to differentiate among practices. In addition, no single relatively high value of performance for a measure should be used as an indication of that measure being "topped out", and hence no longer important or meaningful to measure.

PCPI #	**NQF endorsed (#)**	**Measure**	**CMS PQRI**[1] (years, data source, performance 2007, 2008)	**DOQ-IT**[2] (performance mean)	**Persell Testing Project**[3] (performance)	**Cardio- HIT Phase II** [4](performance)
1		Blood pressure Measurement	-	86.9%	97.6%	
2		Lipid profile	#152 2009: claims, registry	83.3%	81.6%	
3	0065	Symptom and activity assessment	#196 2010: registry, MG			
4a		Smoking cessation (Queried)				
4b		Smoking cessation (Intervention)				
5	0067	Antiplatelet therapy	#6 2007: claims **72.6** % 2008: claims **69.3 %** 2009: claims, registry 2010: claims, registry, MG	82.2%	81.9%	83.95%
6	0074	Drug therapy for lowering LDL-cholesterol	#197 2010: registry, MG	50.0%	85.3%	70.91%
7	0070	Beta-blocker therapy – prior myocardial infarction	#7 2007: claims **24.1** % 2008: claims **75.8 %** 2009:, registry 2010: registry, EHR	50.0%	82.8%	69.17%
8	0066	ACE inhibitor or ARB therapy	#118 2008: claims **9.5 %** 2009: claims, registry 2010: registry	80%	85.2%	75.66%
9		Screening for diabetes				

[1] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

** Surrogate testing refers to testing measures, and the corresponding data elements (eg, numerators and denominators), that are similar to those in the PCPI measures.*

What are the reported exception rates? (# patients with valid exceptions / (# patients in denominator)

It is expected that reported exception rates will vary across measures and across the measure reporting and testing programs. This is primarily due to differences in the types of measure (eg, medications versus screening), data sources examined in testing, variation among the practice sites where the measures were implemented, and the types and number of reasons included in the measure specification (ie, medical reason, patient reason, and system reason). Any one value for a reported exception rate, in of itself, should not be interpreted as indication of gaming or patient selection behavior.

Measure	CMS PQRI[5]	Doren [6]	Cardio- HIT Phase II [7]
Blood pressure Measurement	This measure has no exceptions.		
Lipid profile	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		
Smoking cessation (Queried)	This measure has no exceptions.		
Smoking cessation (Intervention)	This measure has no exceptions.		
Antiplatelet therapy	4.2%	3.5%	4.38%
Drug therapy for lowering LDL-cholesterol	-	7.3%	8.56%
Beta-blocker therapy – prior myocardial infarction	8.1%	25.3%	14.53%
ACE inhibitor or ARB therapy	Not reported	10.1%	11.86%
Screening for diabetes	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		

[2] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

[3] Persell SD, Wright JM, Thompson JA, Kmetik KS, Baker DW. Automated review of electronic health records to assess quality of care for outpatients with Coronary Artery Disease. Arch Intern Med. 2006;166:2272-2277

[4] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

[5] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

[6] Doran T, Fullwood C, Reeves D, Gravelle H, and Roland M. Exclusion of Patients from Pay-for-Performance Targets by English Physicians. New England Journal of Medicine. July 17, 2008.

[7] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

2. Which tests have been carried out in which settings or data sources? Tests of feasibility/ implementation, reliability, validity, and unintended consequences conducted in a variety of practice settings including (eg solo practices, large practices, academic practices, safety-net practices, single- and multi-specialty groups).

Setting / Data Source	Medical Record (Gold Standard) (Paper or Electronic)	EHR Reporting	Registry	Administrative Data (single source)	Administrative Data (multiple sources)	Administrative Data Plus Clinical Data
Solo Practice						
Specialty Practice	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Safety-net practice		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Academic Setting		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Community Setting	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			

Feasibility Testing

3. How confident are we that practices can accurately collect and report these measures in a sustainable fashion?

These measures have been tested and found to be generally feasible in EHR, paper, and claims data sources. Results from a study published by Persell, the AMA-sponsored Cardio-HIT project, and the CMS Doctors' Office Quality (DOQ) IT Project, as well as use in CMS's PGP Demonstration project and EHR demonstration project revealed that the CAD measures are feasible to collect, as currently specified.

The feasibility of a PCPI performance measure/measure set refers to:

- Whether or not data are stored in a codified field
- Which clinical codes sets are utilized/available
- Where in the record the data are found
- Necessary clarifications needed to implement the measure
- Documentation of challenges to measure implementation
- The extent to which clinical practices are able to interpret measure definitions and technical specifications, and a) integrate them into existing workflows and health information systems to collect, manage, and manipulate data elements; b) compute performance measures; and c) generate performance reports within a reasonable time frame and budget.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRS, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs
Location of data (eg, problem list, medication summary) was recorded for data elements as well as whether or not the data was codified using a standard code set such as LOINC or SNOMED

- Exported de-identified patient data to a warehouse for measure calculation -- successfully completed by all sites.
- Location of exception data useful to inform EHR design, CDS design.

Results

- Each of the practice sites mapped the data elements required for each of the CAD measures to their individual EHR and determined the additional system and work flow modifications required to integrate any additional data elements needed.
- Since each practice had a unique set of data fields, individual mapping of the data elements at the practice level was required. Each EHR required the development of additional data fields in order to achieve the functionality required to query and report on all data elements for all measures.
- An interface template was developed for each practice EHR which contains the unique set of data fields, validation requirements and acceptable values associated with ACC/AHA/PCPI measures. Using the interface template, each practice queried its EHR database to compile the data elements required for each measure. To assure consistent capture of data across a disperse set of EHR systems, the interface template identifies the submission of the prescribed coding system or standardized medical vocabulary as defined per the ACC/AHA/PCPI measure.
- It was not required that each data element be sent to the data warehouse using a specific coding system or standardized coding language but rather that each site would determine what specificity of data was feasible based on the current structure of data in their EHR. The consensus of the Cardio-HIT team was to provide industry accepted coded values (as identified by HITSP) if available. Examples include LOINC coding for lab tests, ICD for diagnoses and NDC for medications.
- In cases where the EHR was unable to support a medical vocabulary, an acceptable alternative was to substitute a "Y/N" value for those fields. For example, some sites were able to capture the prescription of a medication through the use of NDC codes but other sites determined that the use of Yes/No, medication prescribed (no CPT-II codes sent for medicaitons; CPT-II codes were sent for exceptions) was more feasible.

Percent of CAD Exceptions Found in Codified Data

	Problem List	Other Structured Text	Past Medical History	Free Text Notes/ Dictation	Allergy List	Drug List	Laboratory
All 4 CAD Measures	**80**	**53%**	**50%**	**16%**	**1%**	**0%**	**0%**

Doctor's Office Quality (DOQ) Project

Data Source

National feasibility study, the CMS Doctors' Office Quality[8] (DOQ) Project

Methods

Reviewers assessed the feasibility of use of the ACC/AHA/PCPI measures in offices by performing retrospective audits of paper medical records and electronic health records

Results

Limitations to feasibility were as follows:

DENOMINATOR IDENTIFICATION:

- ICD-9 coding was not always sufficient or accurate in identifying patients with CAD
- According to the specifications, patients were not required to have an office visit specifically addressing the CAD. Therefore, many patients with CAD as a secondary diagnosis were treated for other comorbid conditions during the office visit, and consequently, care processes for CAD were not present

NUMERATOR IDENTIFICATION:

- Antiplatelet Therapy
  - Site 1: Feasible with limitations.
    - Hospitalization and Transfusion documentation was not documented in a codified manner in the EHR. Available data is in a free text format.
  - Site 2: Feasible
- Symptom and activity assessment
  - Not used in this program
- Drug therapy for lowering LDL cholesterol
  - Site 1: Feasible with limitations.
    - Information on terminal illness is not documented in any codified format
  - Site 2: Feasible
- ACE inhibitor or ARB therapy
  - Site 1: Feasible with limitations.
    - LVF access code is not available or retrievable. Intolerance of drug is not obtainable.
  - Site 2: Feasible

CMS PQRI –2008 –Claims

- Three CAD measures were included in the 2008 CMS PQRI program.
- The rate of submissions accepted as appropriately coded were (2008):
  - Antiplatelet therapy **89.18** %
  - Beta-blocker therapy – prior myocardial infarction **31.69** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **65.45** %
    - **20.21** % of submissions were rejected due to an incorrect DX code
- Denominator mismatch rates were (2008):
  - Antiplatelet therapy **10.82** %
  - Beta-blocker therapy – prior myocardial infarction **68.31** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **34.55**%
    - **20.21** % of submissions were rejected due to an incorrect DX code

[8] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

Reliability Testing

4. How confident are we that the measures accurately and consistently assess the performance of physicians providing the care assessed in the measure?

Reliability is whether two abstractors, reviewing the same data from the same data source, would come to the same conclusion as to the patient meeting the measure, not meeting the measure, or qualifying as an exception.

Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing[9]

Data Source:
Paper Medical Records
Methods
A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors
Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural)
Results
Overall reliability rate for all participating clinics was **98.1**%
Kappa statistic** for individual data elements:

- Beta blocker therapy = **1.00** *(no mismatches)*
- Diagnosis of CAD = **1.00** *(no mismatches)*
- Lipid profile = **0.98**
- Statin therapy = **0.95**
- Prior myocardial infarction = **0.91**
- Antiplatelet therapy = **0.88**
- Revascularization procedure = **0.82**

***see description of kappa statistics at end of this document for more information*

Doctor's Office Quality Pilot Project

Data Source:
2 practices sites with electronic health records
Methods
Abstractor responses were compared with "gold standard" responses determined by two abstractors familiar with the data definitions and who were responsible for abstractor training.
Results

Measure	Doctor's Office Quality (DOQ) Project
Blood pressure Measurement	48 / 48 **100** % 5 / 5 **100** %
Lipid profile	48 / 48 **100** % 3 / 5 **60** %
Antiplatelet therapy	45 / 48 **94** % 5 / 5 **100** %
Drug therapy for lowering LDL-cholesterol	48 / 48 **100** % 5 / 5 **100** %
Beta-blocker therapy – prior myocardial infarction	46 / 48 **96** % 5 / 5 **100** %
ACE inhibitor or ARB therapy	46 / 48 **96** % 4 / 5 **80** %

Measure Exceptions Validated

(and specific exception

5. Are exceptions clinically appropriate and consistently documented?

Exceptions found for these measures were clinically appropriate.

AMA PCPI Testing Project: Cardio-HIT

reasons documented to inform measure maintenance)

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs

Results

All Exceptions	Medical Reason	Clinical Contraindication	Drug Allergy	Drug Interaction	Drug Intolerance
Overall (n=753)	96.3% (95.0% - 97.7%)	52.2% (48.5% - 55.8%)	14.9% (12.3% - 17.5%)	0.8% (0.2% - 1.4%)	33.0% (28.8% - 35.6%)
Antiplatelet therapy (n=97)	99.4% (97.8% - 100.9%)	28.9% (19.9% - 37.9%)	59.7% (50.0% - 69.5%)	5.8% (1.2% - 10.5%)	5.6% (0.99% - 10.1%)
Drug therapy for lowering LDL-C (n=394)	94.9% (92.7% - 97.0%)	40.6% (35.7% - 45.4%)	6.9% (4.4% - 9.4%)	0.00% (0.0% - 0.0%)	52.5% (47.6% - 57.4%)
Beta-blocker therapy for prior MI (n=114)	99.5% (98.1% - 100.8%)	83.7% (77.0% - 90.5%)	4.4% (0.6% - 8.2%)	0.0% (0.0% - 0.0%)	11.9% (5.9% - 17.8%)
ACE inhibitor/ARB therapy (n=121)	95.8% (92.3% - 99.3%)	78.7% (71.4% - 86.0%)	14.9% (8.5% - 21.2%)	0.0% (0.0% - 0.0%)	6.4% (2.0% - 10.8%)

MEASURE EXCLUSION DOCUMENTATION

MEASURE	VERBATIM DOCUMENTATION FOR EXCLUSIONS
ACE inhibitor or ARB therapy	I am going to keep pt off of ACE inhibitor therapy at this time, given the low blood pressure, and hypertrophic myopathy.
	Left nephrectomy.
	Altace, Cough;
	Diovan 320 Mg, 1 PO qd stopped 10/22 for increased cough
	Pt is somewhat hypertensive at today's office visit, and being a diabetic, would benefit from being on an ARB (cannot take ACE inhibitors). We had stopped the Cozaar because of a cough in 2006, but pt tells me that the cough has never gone away. Pt tells me that the cough did improve somewhat after stopping the Cozaar.
	The patient has been complaining recently on dry cough. Upon questioning, seems like cough started at the time when Micardis was started. Patient advised to hold Micardis and see if this will relieve cough.
	The patient has had significant improvement in his dizziness since reduction in the Avalide dose.
	Patient has been very noncompliant with follow up unless in a nursing home and would not use Coumadin or antiarrhythmics, which needed careful and dependable follow up.
Antiplatelet therapy	Antiplatelets, Medical reason
	Aspirin, Medical reason
	Allergy: Aspirin, Medical reason
	no antiplatelets, Pt on Coumadin
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then pt can have the upcoming procedure. A daily aspirin will also be encouraged at that time.
	The patient is to follow up with Dr. ___ Gastroenterology who noted angiodysplasia in the past. She/He is no longer on NSAIDS or aspirin. Her/His H and H have trended down overtime, and she received a transfusion with return to 10 and 30 which is our goal.
	fu subdural the patient hit pt's head on concrete after a fall on March 31. Left frontal subdural hematoma was diagnosed by CT scan. 5/1 /2007. Plavix and aspirin were stopped at that time
	I think the best thing at this time is to keep her on anticoagulation so she does not develop any further embolizations, dc asa. He/She seems to be safe and is not having any falls or any other problems related to his/her visual disturbance.
	UNWILLING TO ORDER ANTIPLATELET DUE LOW PLATELETS,ELEVATED PARTIAL THOMBOBLASTIN TIME AND POSSIBLY RELATED TO HYPERSPLENISM.

Beta-blocker therapy – prior myocardial infarction	Allergies: Beta Blockers, Reynaud's
	Beta Blocker, ? coronary artery spasm; patient had an apparent myocardial injury more than 10 years ago but has normal coronary arteries. Possibly a spasm or an embolus was raised at that point. I think that may be why patient is not on a beta blocker, but I need to review the old records.
Drug therapy for lowering LDL-cholesterol	dyslipidemia discussed niacin and patient is going to think about it
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then the pt can have the upcoming procedure. Will begin anti-lipid agents after the procedure.
	She has had a fasting lipid profile done at the last visit which showed an LDL of 143, which is slightly above goal of 130. However, her HDL was 76 which is excellent. We can discuss this at the next visit.
	For coronary disease. Pt will take aspirin and Pravachol as before. in this context, Zetia is no longer medically necessary so will discontinue

Location and Codification of Exceptions

	Allergy List		Drug List	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	145	2.07%	2	0.00%
Antiplatelet Therapy	65	1.54%	1	0.00%
Drug Therapy for Lowering LDL	31	0.00%	0	0.00%
Beta-blocker Therapy for Prior MI	21	0.00%	0	0.00%
ACE/ARB Therapy	28	7.14%	1	0.00%

	Free Text Notes/Dictation		Laboratory	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	183	25.14%	88	0.00%
Antiplatelet Therapy	28	10.71%	2	0.00%
Drug Therapy for Lowering LDL	46	4.35%	85	0.00%
Beta-blocker Therapy for Prior MI	47	44.68%	0	0.00%
ACE/ARB Therapy	62	32.26%	1	0.00%

	Other Structured		Past Medical History	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	72	48.61%	44	50.00%
Antiplatelet Therapy	7	0.00%	10	40.00%
Drug Therapy for Lowering LDL	5	0.00%	3	0.00%
Beta-blocker Therapy for Prior MI	30	46.67%	22	72.73%
ACE/ARB Therapy	30	70.00%	9	22.22%

	Problem List		
Measure	# Included	% Coded	TOTAL
All CAD Measures	114	81.58%	648
Antiplatelet Therapy	13	76.92%	126
Drug Therapy for Lowering LDL	1	100.00%	171
Beta-blocker Therapy for Prior MI	71	83.10%	191
ACE/ARB Therapy	29	79.31%	160

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)		

Allergy or intolerance	61.46%	59		
Allergy List			47	0.00%
Drug List			2	0.00%
Free Text Notes/Dictation			7	0
Past Medical History			3	0.00%
GI Tract	17.87%	17		
Allergy List			2	0.00%
Assessment List			1	0.00%
Free Text Notes/Dictation			7	9.83%
H&P			1	0.00%
Past Medical History			2	59.37%
Problem List			4	71.60%
Other doc. by pract. for not prescribing therapy	10.99%	11		
Allergy List			7	25.00%
Consultation			1	0.00%
Free Text Notes/Dictation			3	0.00%
Blood	6.20%	6		
Consultation			0	0.00%
Free Text Notes/Dictation			2	25.37%
Laboratory			1	0.00%
Past Medical History			2	0.00%
Problem List			1	100.00%
End of Life Issues	0.35%	0		
H&P			0	0.00%
Hepatic Liver	3.12%	3		
Free Text Notes/Dictation			2	0.00%
Past Medical History			1	.
Problem List			1	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)	Location Count	Percent Coded at Location
Renal	65.56%	42		
Allergy List			2	100.00%
Assessment List			15	88.05%
Consultation			0	0.00%
ED note			0	0.00%
Free Text Notes/Dictation			16	67.87%
Past Medical History			2	29.61%
Problem List			6	58.62%
Allergy or intolerance	13.73%	9		
Allergy List			9	0.00%
Other doc. by pract. for not prescribing therapy	5.62%	4		
Allergy List			2	0
Free Text Notes/Dictation			2	0
Moderate or severe aortic stenosis subaortic stenosis	3.38%	2		
Consultation			0	100.00%
Echo			0	100.00%
Free Text Notes/Dictation			0	0.00%

Past Medical History			2	0.00%
Adverse reaction to ACE inhibitor or ARB therapy	2.09%	1		
Allergy List			1	0.00%
Free Text Notes/Dictation			1	0.00%
Hyperkalemia	7.70%	5		
Allergy List			2	0.00%
Free Text Notes/Dictation			3	21.31%
End of Life Issues	0.39%	0		
Free Text Notes/Dictation			0	100.00%
Hypotension	1.13%	1		
Free Text Notes/Dictation			1	0.00%
Problem List			0	100.00%
Angioedema	0.39%	0		
ED note			0	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Comparison of Data Sources

*Note: in these projects it is recommended to always compare the secondary data source to the current gold standard of manual abstraction of the medical record.

6. Is measure collection from different data sources comparable? How does automated measure calculation compare to manual measure abstraction?

Persell Published Study[10]

Data Source:

Single health system electronic health record system

Methods

Accuracy of CAD data elements was verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRS

For patients who appeared to fail the quality measure, researchers completed a manual review of each patient's electronic chart, focusing on free text and medical tests

Results

	Automated review alone	**Automated review plus manual review of free text physician notes for cases that failed quality measures**
Blood pressure Measurement	**97.6** %	**99.2** % (+1.5% change)
Lipid profile	**81.6** %	**87.5** % (+5.9% change)
Antiplatelet therapy	**81.9** %	**96.2** % (+14.3% change)
Drug therapy for lowering LDL-cholesterol	**92.5** %	**97.2** % (+ 4.7% change)
Beta-blocker therapy – prior myocardial infarction	**82.8** %	**90.3** % (+ 7.5% change)
ACE inhibitor or ARB therapy	**85.2** %	**89.3** % (+ 4.1% change)

Discrepancies between performance measures based on EHR automated review alone and those based on automated review plus manual review were due to two types of misclassification: failure to correctly identify performance of quality measures among true, eligible patients; and failure to correctly exclude patients. The rate of misclassification from both sources of error ranged from 33% (ACE inhibitor/ARB measure) to 81% (antiplatelet therapy measure) for the individual measures.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project

46,737 eligible patients

Methods

- Translated integrated measure specifications to data fields within practice EHRs
- Accuracy of CAD data elements were verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRs
- For two samples of patients, researchers completed a manual review of each patient's electronic chart
    - Sample 1: patients who appeared to fail the quality measure (did not meet numerator nor have exception)
    - Sample 2: patients who appeared to not meet the numerator and have an exception to the quality measure

Results

Performance rates calculated automatically by the data warehouse compared to the rates of performance, opportunities for improvement and misclassification rates determined with manually abstracted data samples

- Automated review alone: Overall performance for the three measures was 76.67% and varied among the measures:
    - Antiplatelet Therapy: 83.95%
    - Drug Therapy for Lowering LDL: 70.91%
    - Beta-blocker therapy for Prior MI: 69.17%
    - ACEI/ARB therapy: 75.66%
- Manual review alone: 25.37% of the cases were identified as failing to meet the measure (opportunities for improvement):
    - Antiplatelet Therapy: 48.26%
    - Drug Therapy for Lowering LDL: 7.66%
    - Beta-blocker therapy for Prior MI: 7.12%
    - ACEI/ARB therapy: 41.49%
- Discrepancies between performance measures based on EHRs automated review alone and those based on automated review plus manual review were due to two types of misclassification:
    - identify performance among true, eligible patients
    - failure to correctly exclude patients
- The overall rate of misclassification in the automatic calculation (identified from manual review) was 32.40% and varied across the measures:
    - Antiplatelet Therapy: 5.66%
    - Drug Therapy for Lowering LDL: 52.46%
    - Beta-blocker therapy for Prior MI: 60.56%
    - ACEI/ARB therapy: 11.06%

7. If automated reporting identifies a patient as meeting the measure, what likelihood is there that manual review will validate that finding?

This test has not yet been performed for this measure set.

8. Are the individual parts of the measure (numerator, denominator, exceptions) reliably calculated, as compared to the overall measure?

This test has not yet been performed for this measure set.

9. What proportion of patients that met the measure are correctly identified?

This test has not yet been performed for this measure set.

10. What proportion of patients that do not meet the measure are correctly identified?

AMA PCPI Testing Project: Cardio-HIT

Patients Automatically Identified as Exceptions	Agreement			
Measure	Mean Rate	S.E.	95% C.I.	N
All CAD Measures	92.57%	1.13%	90.26%, 94.88%	538
Antiplatelet Therapy	88.59%	3.19%	81.83%, 95.35%	99
Drug Therapy for Lowering LDL	93.85%	1.49%	90.75%, 96.96%	261
Beta-blocker Therapy for Prior MI	93.35%	2.78%	87.27%, 99.43%	80
ACE/ARB Therapy	92.53%	2.66%	86.79%, 98.26%	97

Patients Automatically Identified as Opportunities for Improvement	Agreement			
Measure	Mean Rate	S.E.	95 % C.I.	N
Coronary Artery Disease	25.37%	1.79%	21.78%, 28.96%	592
Antiplatelet Therapy	48.26%	3.62%	40.9%, 55.63%	190
Drug Therapy for Lowering LDL	7.66%	1.63%	4.26%, 11.05%	265
Beta-blocker Therapy for Prior MI	7.12%	3.48%	0%, 14.86%	55
ACE/ARB Therapy	41.49%	5.42%	30.26%, 52.73%	83

False Positive Opportunities for Improvement - Numerator Actually Met

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	31.57%	1.91%	27.74%, 35.4%	186.89	592
Antiplatelet Therapy	37.17%	3.50%	30.04%, 44.3%	70.71	190
Drug Therapy for Lowering LDL	30.95%	2.84%	25.19%, 36.71%	81.88	265
Beta-blocker Therapy for Prior MI	7.85%	3.64%	0%, 15.89%	4.29	55
ACE/ARB Therapy	36.37%	5.30%	25.38%, 47.36%	30.01	83

False Positive Opportunities for Improvement - Exceptions Actually Found, by Measure - Weighed Sample Data

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	10.66%	1.27%	8.09%, 13.23%	63.11	592
Antiplatelet Therapy	8.91%	2.07%	4.6%, 13.22%	16.95	190
Drug Therapy for Lowering LDL	8.93%	1.75%	5.31%, 12.56%	23.64	265
Beta-blocker Therapy for Prior MI	24.46%	5.81%	12.16%, 36.77%	13.38	55
ACE/ARB Therapy	11.08%	3.46%	3.7%, 18.46%	9.14	83

EHR "In Silo" Verification

Note: initially this may be of limited usefulness until EHR functionality and use progresses

11. Can EHR products reliably identify data elements and calculate these measures?

A "dummy" data set of patient data will be provided to several EHR vendors along with EHR measure specifications. The vendors will use this test file to determine if their system can reliably calculate the measures based on intended documentation patterns.

This test has not yet been performed for this measure set.

Predictive Validity	**12. Does high performance on these measures lead to better patient outcomes?** If the scientific evidence regarding the process of care is strong and widely accepted in the field, no formal evaluation of predictive validity is necessary. If the evidence is less strong, however, it is desirable to show that high performance leads to better patient outcomes. This test has not yet been performed for this measure set. Regarding hospital measures: Several articles published in 2006 and early 2007 have begun to assess the predictive validity of CMS Core Hospital Measures (acute myocardial infarction and heart failure) as they relate to short-term mortality rates.
Unintended Consequences	**13. Have monitoring and testing uncovered unexpected consequences of measurement?** Testing should be performed for anticipated unintended consequences. Unanticipated unintended consequences should be monitored for on a long term basis as they may only occur in later stages and widespread adoption. This test has not yet been performed for this measure set.
Project Descriptions	**Doctor's Office Quality Pilot Project** Data was captured at two large physician practice groups who use two distinct EHR systems. The study population of group 1 was their fee-for service Medicare patients. The study population was all non-Medicare patients for Group 2. Once the DOQ clinical measures were developed, the practices were given technical specifications to use to capture the quality measures from their EHR system. Feasibility was assessed for all measures, and some measures were implemented. **Persell Testing Project** Persell and team performed a retrospective electronic medical chart review comparing automated measurement with a 2-step process of automated measurement supplemented by review of free-text notes for apparent quality failures for all patients with CAD from a large internal medicine practice using a commercial EHR. The 7 performance measures included the following: Antiplatelet drug, lipid-lowering drug, beta-blocker following myocardial infarction, blood pressure measurement, lipid measurement, low-density lipoprotein cholesterol control, and angiotensin-converting enzyme inhibitor or angiotensin receptor blocker for patients with diabetes mellitus or left ventricular systolic dysfunction. **Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing** A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors. Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural). **Cardio-HIT Project** The AMA received funding for Phase II of the Cardio-HIT project from the Agency for Healthcare Research and Quality (AHRQ). The AMA in collaboration with five (5) physician practice sites, the Iowa Foundation for Medical Care, and the National Committee for Quality Assurance, conducted a 2-year, observational study of exception reporting, building on the prior work under *Cardio-HIT*, a research collaborative of six (6) EHRs-enabled independent group practices that collected data and reported on nationally recognized physician performance measures for coronary artery disease and heart failure. In *Cardio-HIT Phase II*, we: (1) empirically documented the prevalence and patterns of exception reporting in these measures; (2) assessed the feasibility and accuracy of exception reporting by validating a sample of reported exceptions against manual EHRs record review; and (3) analyzed and addressed stakeholder perspectives on exception reporting to refine existing principles in the design of physician performance measures**.**

Kappa Agreement	**Kappa** — **Strength of Agreement** 0.00 — Poor 0.01 – 0.20 — Slight 0.21 – 0.40 — Fair 0.41 – 0.60 — Moderate 0.61 – 0.80 — Substantial 0.81 – 0.99 — Almost perfect Landis, J.R. and Koch, G. G. (1977) "The measurement of observer agreement for categorical data" in Biometrics. Vol. 33, pp. 159—174

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0066 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Chronic Stable Coronary Artery Disease: ACE Inhibitor or ARB Therapy--Diabetes or Left Ventricular Systolic Dysfunction (LVEF <40%)
De.2 **Brief description of measure**: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have diabetes or a current or prior LVEF <40% who were prescribed ACE inhibitor or ARB therapy
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness, Equity De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, High resource use 1a.2 1a.3 **Summary of Evidence of High Impact:** •16.3 million Americans are living with coronary heart disease – of that 16.3 million, 54% are men and 46% are women. (1) •Coronary heart disease makes up more than half of all cardiovascular events in men and women less than 75 years of age. (1) •The lifetime risk of developing coronary heart disease after age 40 is 49% for men and 32% for women. (1) •The incidence of coronary heart disease in women lags behind men by 10 years for total coronary heart disease and by 20 years for more serious clinical events such as myocardial infarction and death.(1) •Coronary heart disease caused approximately 1 of every 6 deaths in the United States in 2007. (1) •While death rates have fallen from 1968 to the present, coronary heart disease is the largest killer of men and women in the United States. (1) It has been estimated that approximately 47% of this decrease is attributed to treatments (medical and surgical), while approximately 44% is attributed to changes in risk	**1a** C☐ P☐ M☐ N☐

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

factors. (1)

•In 2007, the estimated direct and indirect cost for coronary heart disease in the United States is $177.5 billion. (1)

•In 2006, coronary artery disease was the most expensive condition treated in US hospitals at a cost of $52.6 billion (2) and accounted for 5% of total hospitalization costs.(3)

•Thirty percent of Medicare's total expenditures are applied to cardiovascular disease.(4)

•In 2007, $5.2 billion was spent on outpatient visits related to chronic ischemic heart disease.(5)

1a.4 **Citations for Evidence of High Impact:** (1) Roger VL, Go AS, Lloyd-Jones DM, et al; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2011 update: a report from the American Heart Association. Circulation. 2011;123:e000–e000. Available at: http://circ.ahajournals.org/cgi/reprint/CIR.0b013e3182009701v1
(2) Andrews RM. The national hospital bill: the most expensive conditions by payer, 2006. Agency for Healthcare Research and Quality, Statistical Brief #59. 2008. Available at: http://www.hcup-us.ahrq.gov/reports/ statbriefs/ sb59.pdf.
(3) Agency for Healthcare Research and Quality. HCUP Facts and Figures, 2006: Statistics on Hospital-based Care in the United State. Available at: http://www.hcup-us.ahrq.gov/reports/factsandfigures/facts_figures_2006. jsp#ex4_2b.
(4) Centers for Medicare and Medicaid Services. Health Care Financing Review: Medicare & Medicaid Statistical Supplement. Table 10.4: Hospital Outpatient bills, covered charges, and program payments under medicare by selected reasons for the visit: calendar year 2007. Baltimore, MD: Centers for Medicare and Medicaid Services; 2008. Available at"
http://www.cms.gov.MedicareMedicaidStatSupp/downloads/2008Table10.4.pdf
(5) Trogdon JG, Finkelstein EA, Nwaise IA, Tangka FK, Orenstein D. The economic burden of chronic cardiovascular disease for major insurers. Health Promotion Practice. 2007;8(3):234-242

1b. Opportunity for Improvement

1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Improvement in the number of patients with CAD who have diabetes or LVEF <40% who are prescribed ACE inhibitor or ARB therapy.

1b.2 **Summary of data demonstrating performance gap (variation or overall poor performance) across providers:**
Although there have been improvements in the prescription rates of secondary prevention medications for CAD patients, a gap persists between the benefits demonstrated with these medications in clinical trials and the effectiveness observed in clinical practice. One potential explanation for this discrepancy is suboptimal adherence to secondary prevention medications in practice compared with clinical trials, where adherence is often closely monitored. One study found that over a median follow up of 4.1 years, medication nonadherence to statins, ACE inhibitors, and beta-blockers was common, occurring in approximately 1 in 4 patients. Among patients dispensed ACE inhibitors or angiotensin-receptor blockers (n = 10,021), 21.6% were nonadherent. (2)

A study conducted by Rabus and colleagues followed 73 patients who were diagnosed to have CAD were followed up for 5 years. They concluded there was sub-optimal prescribing of secondary prevention drugs and absence of continuity of prescribing these secondary prevention drugs in pharmaceutical care of coronary artery disease patients.

- The 'initial prescribing rate' at discharge was found to be 44% for ACE inhibitors.
- 'Continuity of prescribing' for 5 years was,17% for ACE inhibitors (3)

Berthiaume and colleagues conducted a study to evaluate the effect of a managed care organization's intervention program in optimizing secondary prevention of CAD. An analysis that examined 48,586 medical records of patients with CAD demonstrated that The prescription rates for all 3 medications (lipid-lowering agents, ACE/ARBs and beta-blockers) used in secondary prevention of CAD consistently improved from 2000 to 2004. More specifically, use of ACE inhibitors or ARBs increased consistently over time from 44% to 55%. (1)

1b
C ☐
P ☐
M ☐
N ☐

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

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

Additional data is available in section 1 of the CAD measure testing summary.

1b.3 Citations for data on performance gap:
(1) Berthiaume JT, Davis J, Taira DA, Thein KK. A managed care organization's use of integrated health management to improve secondary prevention of coronary artery disease. American Journal of Managed Care. 2007;13:142-147.

(2) Ho PM, Magid DJ, Shetterly SM, et al. Medication nonadherence and adverse outcomes in CAD patients. American Heart Journal. 2008;155(4):772-779.

(3) Rabus SA, Izzettin FV, Sancur M, Karakaya O, Kargin R, Yakut C. Five-year follow-up of drug utilization for secondary prevention in coronary artery disease. Pharmacology World and Science. 2008;30(6)753-758.

1b.4 Summary of Data on disparities by population group:
We are not aware of any publications/evidence outlining disparities in this area.

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Nonadherence to cardioprotective medications is prevalent among outpatients with CAD and can be associated with a broad range of adverse outcomes, including all-cause and cardiovascular mortality, cardiovascular hospitalizations, and the need for revascularization procedures.

In the absence of contraindications, ACE inhibitors or ARBs are recommended for all patients with a diagnosis of CAD and diabetes or reduced left ventricular systolic function23. ACE inhibitors remain the first choice, but ARBs can now be considered a reasonable alternative. Both pharmacologic agents have been shown to decrease the risk of death, myocardial infarction, and stroke. Additional benefits of ACE inhibitors include the reduction of diabetic symptoms and complications for patients with diabetes.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**

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

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
ACE inhibitors should be started and continued indefinitely in all patients with left ventricular ejection fraction less than or equal to 40% and in those with hypertension, diabetes, or chronic kidney disease, unless contraindicated. (Class I Recommendation, Level A Evidence). (ACC/AHA, 2007)

Angiotensin receptor blockers are recommended for patients who have hypertension, have indicators for but are intolerant of ACE inhibitors, have heart failure, or have had a myocardial infarction with left ventricular ejection fraction less than or equal to 40% (Class I Recommendation, Level A Evidence). (ACC/AHA, 2007)

1c
C ☐
P ☐
M ☐
N ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

1c.10 Clinical Practice Guideline Citation: Fraker JD, Fihn SD, writing on behalf of the 2002 Chronic Stable Angina Writing Committee. 2007 chronic angina focused update of the ACC/AHA 2002 Guidelines for the Management of Patients with Chronic Stable Angina: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines Writing Group to Develop the Focused Update of the 2002 Guidelines for the Management of Patients with Chronic Stable Angina. J Am Coll Cardiol. 2007;50:2264-2274. **1c.11 National Guideline Clearinghouse or other URL:** **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** **1c.13 Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:** ACC/AHA Classification of Recommendations and Levels of Evidence Classification of Recommendations Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective. Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment. Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy. Class IIb: Usefulness/efficacy is less well established by evidence/opinion. Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful. Level of Evidence Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses. Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies. Level of Evidence C: Only consensus **1c.14 Rationale for using this guideline over others:** It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other healthcare providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to included documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in the quality of care.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	**2a-specs** **C☐** **P☐** **M☐** **N☐**
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Patients who were prescribed ACE inhibitor or ARB therapy*	

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

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

*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

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
Once during measurement period

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative: Report CPT II Code 4009F: Angiotensin converting enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy prescribed

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have diabetes or a current or prior LVEF <40%

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Aged 18 years and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
12 consecutive months

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):**
Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, allergy, intolerant, pregnancy, renal failure due to ACE inhibitor, diseases of the aortic or mitral valve, other medical reasons)

Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, lack of drug availability, other reasons attributable to the health care system)

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative:
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 therapy
• Append modifier to CPT II code 4009F-2P

Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy
• Append modifier to CPT II code 4009F-3P

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

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

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
See attached for calculation algorithm.

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

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL www.pinnacleregistry.org

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment PCPI_CAD-8_ACE-ARB Diabetes LVSD NQF 0066.pdf

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

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Home, Ambulatory Care: Office, Ambulatory Care: Clinic, Nursing home (NH) /Skilled Nursing Facility (SNF), Ambulatory Care: Hospital Outpatient, Assisted Living, Group homes

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** Additional data is available in section 4 of the CAD measure testing summary.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
Additional data is available in section 4 of the CAD measure testing summary.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
Additional data is available in section 4 of the CAD measure testing summary.

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:**

2c
C☐
P☐

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

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

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

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
All PCPI performance measures are assessed for content validity by expert work group members during the development process. Additional input on the content validity of draft measures is obtained through a 30-day public comment period and by also soliciting comments from a panel of consumer, purchaser, and patient representatives convened by the PCPI specifically for this purpose. All comments received are reviewed by the expert work group and the measures are adjusted as needed. Other external review groups (eg, focus groups) may be convened if there are any remaining concerns related to the content validity of the measures.

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:

M☐ N☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
Additional data is available in section 5 of the CAD measure testing summary.

2d.2 Citations for Evidence:
Additional data is available in section 5 of the CAD measure testing summary.

2d.3 Data/sample *(description of data/sample and size)*: Additional data is available in section 5 of the CAD measure testing summary.

2d.4 Analytic Method *(type analysis & rationale)*:
Additional data is available in section 5 of the CAD measure testing summary.

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
Additional data is available in section 5 of the CAD measure testing summary.

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: This measure does not employ the use of risk adjustment.

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

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

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:

2e C☐ P☐ M☐ N☐ NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: Additional data is available in section 1 of the CAD measure testing summary.

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
Additional data is available in section 1 of the CAD measure testing summary.

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
Additional data is available in section 1 of the CAD measure testing summary.

2f C☐ P☐ M☐ N☐

2g. Comparability of Multiple Data Sources/Methods

2g C☐

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

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; ... [2]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [3]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and w ... [4]

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessatio ... [5]

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

2g.1 Data/sample *(description of data/sample and size)*: Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary. **2g.2 Analytic Method** *(type of analysis & rationale)*: Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary. **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary.	**P**☐ **M**☐ **N**☐ **NA**☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The measure is not stratified by patient groups or cohorts that could potentially be affected by disparities in care, nor are we aware of any existing research identifying disparities in care that may be relevant to this measure. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** We are not aware of any relevant disparities that have been identified.	**2h** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C**☐ **P**☐ **M**☐ **N**☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** *(If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years)*: This measure is not yet used in any public reporting initiative. The measure will, however, be eligible for inclusion in the CMS PQRS and other government programs in 2012 and would thus provide information about clinician participation to the public. The ACCF, AHA, and PCPI believe that the reporting of such participation information is a beneficial first step on a trajectory toward the public reporting of performance results, which is most appropriate after the measures are thoroughly tested and the reliability of the performance data has been validated. Continued NQF endorsement will facilitate our ongoing progress toward this public reporting objective. **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** All PCPI measures are suitable for use in quality improvement initiatives and are made freely available on the PCPI website and through the implementation efforts of medical specialty societies and other PCPI members. The PCPI strongly encourages the use of its measures in QI initiatives and seeks to provide information on such initiatives to PCPI members. CMS PQRI Program 2008: claims 2009: claims, registry 2010: registry	**3a** **C**☐ **P**☐ **M**☐ **N**☐

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

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

The American Heart Association's Get With The Guidelines®-Outpatient (GWTG-O) is a virtual performance improvement program that will improve adherence to evidence-based care in the outpatient setting, including specialist practices, general healthcare practices and health clinics. GWTG-Outpatient historically has had a long history of quality improvement for cardiovascular care. They have published 65 publications over the past 10 years. This program is designed to assist healthcare professionals in the outpatient setting to provide the best possible care to patients. This program collects a number of clinical measures for primary and secondary prevention. Clinical measure sets include those developed by American Heart Association, including those co-developed with other organizations, such as the American College of Cardiology Foundation and the American Medical Association, as well as other National Quality Forum endorsed measures.

Through this program, we collect data on clinical measures affecting a number of cardiovascular related conditions including, atrial fibrillation, coronary artery disease, heart failure, hypertension, diabetes, and preventative care. The primary analytical system used is Duke Clinical Research Institute. Get With The Guidelines®-Outpatient is a quality improvement program that can be utilized for Maintenance of Certification (MOC) with groups like American Board of Internal Medicine (ABIM) and American Board of Family Medicine (ABFM). ABIM has confirmed that the reports received from Get With The Guidelines-Outpatient can be utilized in completion of their Self-Directed Practice Improvement Module (PIM). The Self-Directed PIM provides one pathway for earning practice performance credit in ABIM's MOC program. This program includes several integral components: A preliminary Continuing Education (CE) course for the care team, data submission and reporting that is integrated with existing Electronic Health Records (EHRs)/health technology platforms, corresponding professional and provider education including webinars, online tools and resources, digital access to reference materials and videos through the Get With The Guidelines®-Outpatient website (http://outpatient.heart.org). The free continuing education activity titled, Outpatient Quality Improvement Focus, addresses the quality chasm and treatment gap, presents the benefits of quality improvement and identifies the steps necessary for implementation in the practice setting. This continuing education activity is certified for physicians, nurses and pharmacists.

The American College of Cardiology Foundation's Cardiology Practice Improvement Pathway (CPIP) uses clinical measure sets that are developed and specified by the American College of Cardiology Foundation with the American Heart Association and the American Medical Association's Physician Consortium for Performance Improvement for Hypertension, Stable Coronary Artery Disease, Heart Failure, and Atrial Fibrillation/Atrial Flutter. This program is intended as an approved quality improvement product that can be applied toward ABIM's Part IV practice performance requirement for Maintenance of Certification (ABIM AQI application submitted). They are in the process of creating a homepage on the Cardiosource.org homepage. The URL will be cardiosource.org/cpip. The web-based tool will be available after spring 2011. Through an online webinar hosted in November 2010, CPIP anticipates enrolling 50 - 100 practices during 2011 which will provide data from about 500-1,000 cardiologists. This ACCF initiative has contracted with the NY QIO: IPRO to analyze and scores based on thresholds. Of the 100 points needed to achieve recognition in the program, 70 come directly from clinical points such as the Heart Failure measures that are being submitted to NQF for consideration. IPRO will audit 5% of practices who submit their data for recognition evaluation.

The American College of Cardiology Foundation's has an Performance Improvement program entitled "A New Era" which is an educational format approved for credit by the American Medical Association (AMA) and the American Nursing Credentialing Center. This continuing medical education program blends both quality improvement and educational methodologies to provide a high quality learning experience that impacts changes to practice. These activities are structured, long-term processes in which a healthcare professional learns about the heart failure specific performance metrics, uses metrics to retrospectively assess his practice, applies these metrics prospectively over a useful interval, and reevaluates his performance. As part of this process, clinicians set goals for change and engage in structured learning activities to improve their performance. As of December 6th, 2010:
- 425 clinicians have enrolled in A New ERA
- The data is generated from all but four states (Montana, New Hampshire, South Dakota, and Wyoming)
- 82% are physicians
- 90% agreed or strongly agreed that performance metric data were valuable
- 80% agreed or strongly agreed that performance metric data review would help them improve their practice

- No one has finished the program, as it takes several months to do so In 2008, the American College of Cardiology Foundation launched the PINNACLE program (formerly known as the Improving Continuous Cardiac Care or IC3). This was the first, national, prospective, outpatient based cardiac QI registry in the US. While participation is voluntary, this registry collects a variety of longituditional patient data at the point of service, including patients' symptoms, vital signs, medication, and recent hospitalizations. Jointly developed ACCF/AHA/PCPI measures for Coronary Artery Disease, Heart Failure, and Atrial Fibrillation. Data collection is achieved in 2 ways for the practices: paper forms or practice's electronic medical record data collection systems. The primary analytical system used is St. Luke's Mid America Heart Institute. The ACCF registry, PINNACLE, pulls data from outpatient facilities via paper flowsheets or 14 EHR vendors. As of December 10, 2010, there are 47 practices collecting data at 200 sites with 276,000 unique patients representing 1 million documented encounters. **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)*: 3a.5 **Methods** *(e.g., focus group, survey, QI project)*: 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*:	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:** Maintenance submission of NQF #0066: ACE Inhibitor/Angiotensin Receptor Blocker (ARB) Therapy	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?**	**4a** C☐ P☐

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

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

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

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

Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Although we are not currently aware of any unintended consequences related to this measure, we plan through an active redesign of the PCPI website to facilitate the collection of information on unintended consequences from the users of PCPI measures.	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Additional data is available in section 3 of the CAD measure testing summary. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Additional data is available in section 3 of the CAD measure testing summary. 4e.3 **Evidence for costs:** Additional data is available in section 3 of the CAD measure testing summary. 4e.4 **Business case documentation:** Additional data is available in section 3 of the CAD measure testing summary.	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐

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

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

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

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

Steering Committee: Do you recommend for endorsement? Comments:	Y☐ N☐ A☐

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.2 **Point of Contact**
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Measure Developer If different from Measure Steward
Co.3 **Organization**
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Co.4 **Point of Contact**
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Co.5 **Submitter If different from Measure Steward POC**
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Co.6 **Additional organizations that sponsored/participated in measure development**
American College of Cardiology Foundation, American Heart Association

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
Bruce Abramowitz, MD, FACC (interventional cardiology; measure implementation)
Karen Alexander, MD (cardiology; geriatrics)
Craig T. Beam, CRE (patient representative)
Robert O. Bonow, MD, MACC, FAHA, FACP (cardiology)
Jill S. Burkiewicz, PharmD, BCPS (pharmacy)
Michael Crouch, MD, MSPH (family medicine)
David C. Goff, Jr., MD, PhD, FAHA, FACP (internal medicine)
Richard Hellman, MD, FACP, FACE (endocrinology)
Thomas James, III, FACP, FAAP (health plan representative)
Marjorie L. King, MD, FACC, MAACVPR (cardiology; cardiac rehabilitation)
Edison A. Machado, Jr., MD, MBA (measure implementation)
Eduardo Ortiz, MD, MPH (guideline development)
Michael O'Toole, MD (cardiology; electrophysiology; measure implementation)
Stephen D. Persell, MD, MPH (internal medicine; measure implementation)
Jesse M. Pines, MD, MBA, MSCE, FAAEM (emergency medicine)
Frank J. Rybicki, MD, PhD (radiology)
Lawrence B. Sadwin (patient representative)
Joanna D. Sikkema, MSN, ANP-BC, FAHA (cardiology)
Peter K. Smith, MD (thoracic surgery)
Patrick J. Torcson, MD, FACP, MMM (hospital medicine)
John B. Wong MD, FACP (internal medicine)

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Ad.2 If adapted, provide name of original measure: Maintenance submission of NQF #0066: ACE Inhibitor/Angiotensin Receptor Blocker (ARB) Therapy
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2003
Ad.7 Month and Year of most recent revision: 05, 2009
Ad.8 What is your frequency for review/update of this measure? Every 3 years or as new evidence becomes available that materially affects the measures
Ad.9 When is the next scheduled review/update for this measure? 05, 2012

Ad.10 Copyright statement/disclaimers: This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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THE MEASURES AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

Limited proprietary coding is contained in the measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The AMA, the ACC, the AHA, the Consortium and its members disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specifications.

Ad.11 -13 Additional Information web page URL or attachment: Attachment Testing Summary CAD NQF Final_10_10-634238751140692178.pdf

Date of Submission (*MM/DD/YY*)**:** 01/20/2011

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Page 8: [2] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

Page 8: [3] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;**Error! Bookmark not defined.** OR

rationale/data support no risk adjustment.

Page 8: [4] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 8: [5] Comment [k19] **Karen Pace** **10/5/2009 8:59:00 AM**

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

PCPI Performance Measure Testing Results – Chronic Stable Coronary Artery Disease

The PCPI Testing Protocol outlines the comprehensive set of tests that should be conducted in different practice settings, using different data sources, for each performance measurement set. The PCPI recognizes that multiple testing projects will be needed to achieve the required test results for each measurement set. Moreover, testing and surveillance should be part of continued evaluation and updating of the measures.

This document presents results for the American College of Cardiology (ACC)/American Heart Association (AHA)/ PCPI Hypertension Physician Performance Measures from the CMS PQRI program, the DOQ program, a peer-reviewed study, a CAD measure pilot testing project and the Cardio-HIT project.

1. Where are the measures used and what are the documented performance rates ?

Performance rates for individual measures are found to vary across the measure reporting and testing programs. This is expected, in that the performance rates are derived from different data sources, different practice sites, and variation in both the program implementation of the measures and approaches to implementation of the measures at individual practices or by the physicians in the practice sites included in the testing project. Variation in performance rates across practice sites suggests that the measure is able to differentiate among practices. In addition, no single relatively high value of performance for a measure should be used as an indication of that measure being "topped out", and hence no longer important or meaningful to measure.

PCPI #	**NQF endorsed (#)**	**Measure**	**CMS PQRI**[1] (years, data source, performance 2007, 2008)	**DOQ-IT**[2] (performance mean)	**Persell Testing Project**[3] (performance)	**Cardio- HIT Phase II** [4](performance)
1		Blood pressure Measurement	-	86.9%	97.6%	
2		Lipid profile	#152 2009: claims, registry	83.3%	81.6%	
3	0065	Symptom and activity assessment	#196 2010: registry, MG			
4a		Smoking cessation (Queried)				
4b		Smoking cessation (Intervention)				
5	0067	Antiplatelet therapy	#6 2007: claims **72.6** % 2008: claims **69.3 %** 2009: claims, registry 2010: claims, registry, MG	82.2%	81.9%	83.95%
6	0074	Drug therapy for lowering LDL-cholesterol	#197 2010: registry, MG	50.0%	85.3%	70.91%
7	0070	Beta-blocker therapy – prior myocardial infarction	#7 2007: claims **24.1** % 2008: claims **75.8 %** 2009:, registry 2010: registry, EHR	50.0%	82.8%	69.17%
8	0066	ACE inhibitor or ARB therapy	#118 2008: claims **9.5 %** 2009: claims, registry 2010: registry	80%	85.2%	75.66%
9		Screening for diabetes				

[1] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

** Surrogate testing refers to testing measures, and the corresponding data elements (eg, numerators and denominators), that are similar to those in the PCPI measures.*

What are the reported exception rates? (# patients with valid exceptions / (# patients in denominator)

It is expected that reported exception rates will vary across measures and across the measure reporting and testing programs. This is primarily due to differences in the types of measure (eg, medications versus screening), data sources examined in testing, variation among the practice sites where the measures were implemented, and the types and number of reasons included in the measure specification (ie, medical reason, patient reason, and system reason). Any one value for a reported exception rate, in of itself, should not be interpreted as indication of gaming or patient selection behavior.

Measure	CMS PQRI[5]	Doren [6]	Cardio- HIT Phase II [7]
Blood pressure Measurement	This measure has no exceptions.		
Lipid profile	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		
Smoking cessation (Queried)	This measure has no exceptions.		
Smoking cessation (Intervention)	This measure has no exceptions.		
Antiplatelet therapy	4.2%	3.5%	4.38%
Drug therapy for lowering LDL-cholesterol	-	7.3%	8.56%
Beta-blocker therapy – prior myocardial infarction	8.1%	25.3%	14.53%
ACE inhibitor or ARB therapy	Not reported	10.1%	11.86%
Screening for diabetes	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		

[2] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

[3] Persell SD, Wright JM, Thompson JA, Kmetik KS, Baker DW. Automated review of electronic health records to assess quality of care for outpatients with Coronary Artery Disease. Arch Intern Med. 2006;166:2272-2277

[4] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

[5] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

[6] Doran T, Fullwood C, Reeves D, Gravelle H, and Roland M. Exclusion of Patients from Pay-for-Performance Targets by English Physicians. New England Journal of Medicine. July 17, 2008.

[7] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

2. Which tests have been carried out in which settings or data sources? Tests of feasibility/ implementation, reliability, validity, and unintended consequences conducted in a variety of practice settings including (eg solo practices, large practices, academic practices, safety-net practices, single- and multi-specialty groups).

Setting / Data Source	Medical Record (Gold Standard) (Paper or Electronic)	EHR Reporting	Registry	Administrative Data (single source)	Administrative Data (multiple sources)	Administrative Data Plus Clinical Data
Solo Practice						
Specialty Practice	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Safety-net practice		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Academic Setting		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Community Setting	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			

Feasibility Testing

3. How confident are we that practices can accurately collect and report these measures in a sustainable fashion?

These measures have been tested and found to be generally feasible in EHR, paper, and claims data sources. Results from a study published by Persell, the AMA-sponsored Cardio-HIT project, and the CMS Doctors' Office Quality (DOQ) IT Project, as well as use in CMS's PGP Demonstration project and EHR demonstration project revealed that the CAD measures are feasible to collect, as currently specified.

The feasibility of a PCPI performance measure/measure set refers to:

- Whether or not data are stored in a codified field
- Which clinical codes sets are utilized/available
- Where in the record the data are found
- Necessary clarifications needed to implement the measure
- Documentation of challenges to measure implementation
- The extent to which clinical practices are able to interpret measure definitions and technical specifications, and a) integrate them into existing workflows and health information systems to collect, manage, and manipulate data elements; b) compute performance measures; and c) generate performance reports within a reasonable time frame and budget.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRS, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs
Location of data (eg, problem list, medication summary) was recorded for data elements as well as whether or not the data was codified using a standard code set such as LOINC or SNOMED

- Exported de-identified patient data to a warehouse for measure calculation -- successfully completed by all sites.
- Location of exception data useful to inform EHR design, CDS design.

Results

- Each of the practice sites mapped the data elements required for each of the CAD measures to their individual EHR and determined the additional system and work flow modifications required to integrate any additional data elements needed.
- Since each practice had a unique set of data fields, individual mapping of the data elements at the practice level was required. Each EHR required the development of additional data fields in order to achieve the functionality required to query and report on all data elements for all measures.
- An interface template was developed for each practice EHR which contains the unique set of data fields, validation requirements and acceptable values associated with ACC/AHA/PCPI measures. Using the interface template, each practice queried its EHR database to compile the data elements required for each measure. To assure consistent capture of data across a disperse set of EHR systems, the interface template identifies the submission of the prescribed coding system or standardized medical vocabulary as defined per the ACC/AHA/PCPI measure.
- It was not required that each data element be sent to the data warehouse using a specific coding system or standardized coding language but rather that each site would determine what specificity of data was feasible based on the current structure of data in their EHR. The consensus of the Cardio-HIT team was to provide industry accepted coded values (as identified by HITSP) if available. Examples include LOINC coding for lab tests, ICD for diagnoses and NDC for medications.
- In cases where the EHR was unable to support a medical vocabulary, an acceptable alternative was to substitute a "Y/N" value for those fields. For example, some sites were able to capture the prescription of a medication through the use of NDC codes but other sites determined that the use of Yes/No, medication prescribed (no CPT-II codes sent for medicaitons; CPT-II codes were sent for exceptions) was more feasible.

Percent of CAD Exceptions Found in Codified Data

	Problem List	Other Structured Text	Past Medical History	Free Text Notes/ Dictation	Allergy List	Drug List	Laboratory
All 4 CAD Measures	**80**	**53%**	**50%**	**16%**	**1%**	**0%**	**0%**

Doctor's Office Quality (DOQ) Project

Data Source

National feasibility study, the CMS Doctors' Office Quality[8] (DOQ) Project

Methods

Reviewers assessed the feasibility of use of the ACC/AHA/PCPI measures in offices by performing retrospective audits of paper medical records and electronic health records

Results

Limitations to feasibility were as follows:

DENOMINATOR IDENTIFICATION:

- ICD-9 coding was not always sufficient or accurate in identifying patients with CAD
- According to the specifications, patients were not required to have an office visit specifically addressing the CAD. Therefore, many patients with CAD as a secondary diagnosis were treated for other comorbid conditions during the office visit, and consequently, care processes for CAD were not present

NUMERATOR IDENTIFICATION:

- Antiplatelet Therapy
  - Site 1: Feasible with limitations.
    - Hospitalization and Transfusion documentation was not documented in a codified manner in the EHR. Available data is in a free text format.
  - Site 2: Feasible
- Symptom and activity assessment
  - Not used in this program
- Drug therapy for lowering LDL cholesterol
  - Site 1: Feasible with limitations.
    - Information on terminal illness is not documented in any codified format
  - Site 2: Feasible
- ACE inhibitor or ARB therapy
  - Site 1: Feasible with limitations.
    - LVF access code is not available or retrievable. Intolerance of drug is not obtainable.
  - Site 2: Feasible

CMS PQRI –2008 –Claims

- Three CAD measures were included in the 2008 CMS PQRI program.
- The rate of submissions accepted as appropriately coded were (2008):
  - Antiplatelet therapy **89.18** %
  - Beta-blocker therapy – prior myocardial infarction **31.69** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **65.45** %
    - **20.21** % of submissions were rejected due to an incorrect DX code
- Denominator mismatch rates were (2008):
  - Antiplatelet therapy **10.82** %
  - Beta-blocker therapy – prior myocardial infarction **68.31** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **34.55**%
    - **20.21** % of submissions were rejected due to an incorrect DX code

[8] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

Reliability Testing

4. How confident are we that the measures accurately and consistently assess the performance of physicians providing the care assessed in the measure?

Reliability is whether two abstractors, reviewing the same data from the same data source, would come to the same conclusion as to the patient meeting the measure, not meeting the measure, or qualifying as an exception.

Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing[9]

Data Source:
Paper Medical Records
Methods
A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors
Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural)
Results
Overall reliability rate for all participating clinics was **98.1**%
Kappa statistic** for individual data elements:

- Beta blocker therapy = **1.00** *(no mismatches)*
- Diagnosis of CAD = **1.00** *(no mismatches)*
- Lipid profile = **0.98**
- Statin therapy = **0.95**
- Prior myocardial infarction = **0.91**
- Antiplatelet therapy = **0.88**
- Revascularization procedure = **0.82**

***see description of kappa statistics at end of this document for more information*

Doctor's Office Quality Pilot Project

Data Source:
2 practices sites with electronic health records
Methods
Abstractor responses were compared with "gold standard" responses determined by two abstractors familiar with the data definitions and who were responsible for abstractor training.
Results

Measure	Doctor's Office Quality (DOQ) Project
Blood pressure Measurement	48 / 48 **100** % 5 / 5 **100** %
Lipid profile	48 / 48 **100** % 3 / 5 **60** %
Antiplatelet therapy	45 / 48 **94** % 5 / 5 **100** %
Drug therapy for lowering LDL-cholesterol	48 / 48 **100** % 5 / 5 **100** %
Beta-blocker therapy – prior myocardial infarction	46 / 48 **96** % 5 / 5 **100** %
ACE inhibitor or ARB therapy	46 / 48 **96** % 4 / 5 **80** %

Measure Exceptions Validated

(and specific exception

5. Are exceptions clinically appropriate and consistently documented?

Exceptions found for these measures were clinically appropriate.

AMA PCPI Testing Project: Cardio-HIT

reasons documented to inform measure maintenance)

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs

Results

All Exceptions	Medical Reason	Clinical Contraindication	Drug Allergy	Drug Interaction	Drug Intolerance
Overall (n=753)	96.3% (95.0% - 97.7%)	52.2% (48.5% - 55.8%)	14.9% (12.3% - 17.5%)	0.8% (0.2% - 1.4%)	33.0% (28.8% - 35.6%)
Antiplatelet therapy (n=97)	99.4% (97.8% - 100.9%)	28.9% (19.9% - 37.9%)	59.7% (50.0% - 69.5%)	5.8% (1.2% - 10.5%)	5.6% (0.99% - 10.1%)
Drug therapy for lowering LDL-C (n=394)	94.9% (92.7% - 97.0%)	40.6% (35.7% - 45.4%)	6.9% (4.4% - 9.4%)	0.00% (0.0% - 0.0%)	52.5% (47.6% - 57.4%)
Beta-blocker therapy for prior MI (n=114)	99.5% (98.1% - 100.8%)	83.7% (77.0% - 90.5%)	4.4% (0.6% - 8.2%)	0.0% (0.0% - 0.0%)	11.9% (5.9% - 17.8%)
ACE inhibitor/ARB therapy (n=121)	95.8% (92.3% - 99.3%)	78.7% (71.4% - 86.0%)	14.9% (8.5% - 21.2%)	0.0% (0.0% - 0.0%)	6.4% (2.0% - 10.8%)

MEASURE EXCLUSION DOCUMENTATION

MEASURE	VERBATIM DOCUMENTATION FOR EXCLUSIONS
ACE inhibitor or ARB therapy	I am going to keep pt off of ACE inhibitor therapy at this time, given the low blood pressure, and hypertrophic myopathy.
	Left nephrectomy.
	Altace, Cough;
	Diovan 320 Mg, 1 PO qd stopped 10/22 for increased cough
	Pt is somewhat hypertensive at today's office visit, and being a diabetic, would benefit from being on an ARB (cannot take ACE inhibitors). We had stopped the Cozaar because of a cough in 2006, but pt tells me that the cough has never gone away. Pt tells me that the cough did improve somewhat after stopping the Cozaar.
	The patient has been complaining recently on dry cough. Upon questioning, seems like cough started at the time when Micardis was started. Patient advised to hold Micardis and see if this will relieve cough.
	The patient has had significant improvement in his dizziness since reduction in the Avalide dose.
	Patient has been very noncompliant with follow up unless in a nursing home and would not use Coumadin or antiarrhythmics, which needed careful and dependable follow up.
Antiplatelet therapy	Antiplatelets, Medical reason
	Aspirin, Medical reason
	Allergy: Aspirin, Medical reason
	no antiplatelets, Pt on Coumadin
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then pt can have the upcoming procedure. A daily aspirin will also be encouraged at that time.
	The patient is to follow up with Dr. ___ Gastroenterology who noted angiodysplasia in the past. She/He is no longer on NSAIDS or aspirin. Her/His H and H have trended down overtime, and she received a transfusion with return to 10 and 30 which is our goal.
	fu subdural the patient hit pt's head on concrete after a fall on March 31. Left frontal subdural hematoma was diagnosed by CT scan. 5/1 /2007. Plavix and aspirin were stopped at that time
	I think the best thing at this time is to keep her on anticoagulation so she does not develop any further embolizations, dc asa. He/She seems to be safe and is not having any falls or any other problems related to his/her visual disturbance.
	UNWILLING TO ORDER ANTIPLATELET DUE LOW PLATELETS,ELEVATED PARTIAL THOMBOBLASTIN TIME AND POSSIBLY RELATED TO HYPERSPLENISM.

Beta-blocker therapy – prior myocardial infarction	Allergies: Beta Blockers, Reynaud's
	Beta Blocker, ? coronary artery spasm; patient had an apparent myocardial injury more than 10 years ago but has normal coronary arteries. Possibly a spasm or an embolus was raised at that point. I think that may be why patient is not on a beta blocker, but I need to review the old records.
Drug therapy for lowering LDL-cholesterol	dyslipidemia discussed niacin and patient is going to think about it
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then the pt can have the upcoming procedure. Will begin anti-lipid agents after the procedure.
	She has had a fasting lipid profile done at the last visit which showed an LDL of 143, which is slightly above goal of 130. However, her HDL was 76 which is excellent. We can discuss this at the next visit.
	For coronary disease. Pt will take aspirin and Pravachol as before. in this context, Zetia is no longer medically necessary so will discontinue

Location and Codification of Exceptions

	Allergy List		Drug List	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	145	2.07%	2	0.00%
Antiplatelet Therapy	65	1.54%	1	0.00%
Drug Therapy for Lowering LDL	31	0.00%	0	0.00%
Beta-blocker Therapy for Prior MI	21	0.00%	0	0.00%
ACE/ARB Therapy	28	7.14%	1	0.00%

	Free Text Notes/Dictation		Laboratory	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	183	25.14%	88	0.00%
Antiplatelet Therapy	28	10.71%	2	0.00%
Drug Therapy for Lowering LDL	46	4.35%	85	0.00%
Beta-blocker Therapy for Prior MI	47	44.68%	0	0.00%
ACE/ARB Therapy	62	32.26%	1	0.00%

	Other Structured		Past Medical History	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	72	48.61%	44	50.00%
Antiplatelet Therapy	7	0.00%	10	40.00%
Drug Therapy for Lowering LDL	5	0.00%	3	0.00%
Beta-blocker Therapy for Prior MI	30	46.67%	22	72.73%
ACE/ARB Therapy	30	70.00%	9	22.22%

	Problem List		
Measure	# Included	% Coded	TOTAL
All CAD Measures	114	81.58%	648
Antiplatelet Therapy	13	76.92%	126
Drug Therapy for Lowering LDL	1	100.00%	171
Beta-blocker Therapy for Prior MI	71	83.10%	191
ACE/ARB Therapy	29	79.31%	160

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)		

Allergy or intolerance	61.46%	59		
Allergy List			47	0.00%
Drug List			2	0.00%
Free Text Notes/Dictation			7	0
Past Medical History			3	0.00%
GI Tract	17.87%	17		
Allergy List			2	0.00%
Assessment List			1	0.00%
Free Text Notes/Dictation			7	9.83%
H&P			1	0.00%
Past Medical History			2	59.37%
Problem List			4	71.60%
Other doc. by pract. for not prescribing therapy	10.99%	11		
Allergy List			7	25.00%
Consultation			1	0.00%
Free Text Notes/Dictation			3	0.00%
Blood	6.20%	6		
Consultation			0	0.00%
Free Text Notes/Dictation			2	25.37%
Laboratory			1	0.00%
Past Medical History			2	0.00%
Problem List			1	100.00%
End of Life Issues	0.35%	0		
H&P			0	0.00%
Hepatic Liver	3.12%	3		
Free Text Notes/Dictation			2	0.00%
Past Medical History			1	.
Problem List			1	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)	Location Count	Percent Coded at Location
Renal	65.56%	42		
Allergy List			2	100.00%
Assessment List			15	88.05%
Consultation			0	0.00%
ED note			0	0.00%
Free Text Notes/Dictation			16	67.87%
Past Medical History			2	29.61%
Problem List			6	58.62%
Allergy or intolerance	13.73%	9		
Allergy List			9	0.00%
Other doc. by pract. for not prescribing therapy	5.62%	4		
Allergy List			2	0
Free Text Notes/Dictation			2	0
Moderate or severe aortic stenosis subaortic stenosis	3.38%	2		
Consultation			0	100.00%
Echo			0	100.00%
Free Text Notes/Dictation			0	0.00%

Past Medical History			2	0.00%
Adverse reaction to ACE inhibitor or ARB therapy	2.09%	1		
Allergy List			1	0.00%
Free Text Notes/Dictation			1	0.00%
Hyperkalemia	7.70%	5		
Allergy List			2	0.00%
Free Text Notes/Dictation			3	21.31%
End of Life Issues	0.39%	0		
Free Text Notes/Dictation			0	100.00%
Hypotension	1.13%	1		
Free Text Notes/Dictation			1	0.00%
Problem List			0	100.00%
Angioedema	0.39%	0		
ED note			0	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Comparison of Data Sources

*Note: in these projects it is recommended to always compare the secondary data source to the current gold standard of manual abstraction of the medical record.

6. Is measure collection from different data sources comparable? How does automated measure calculation compare to manual measure abstraction?

Persell Published Study[10]

Data Source:

Single health system electronic health record system

Methods

Accuracy of CAD data elements was verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRS

For patients who appeared to fail the quality measure, researchers completed a manual review of each patient's electronic chart, focusing on free text and medical tests

Results

	Automated review alone	**Automated review plus manual review of free text physician notes for cases that failed quality measures**
Blood pressure Measurement	**97.6** %	**99.2** % (+1.5% change)
Lipid profile	**81.6** %	**87.5** % (+5.9% change)
Antiplatelet therapy	**81.9** %	**96.2** % (+14.3% change)
Drug therapy for lowering LDL-cholesterol	**92.5** %	**97.2** % (+ 4.7% change)
Beta-blocker therapy – prior myocardial infarction	**82.8** %	**90.3** % (+ 7.5% change)
ACE inhibitor or ARB therapy	**85.2** %	**89.3** % (+ 4.1% change)

Discrepancies between performance measures based on EHR automated review alone and those based on automated review plus manual review were due to two types of misclassification: failure to correctly identify performance of quality measures among true, eligible patients; and failure to correctly exclude patients. The rate of misclassification from both sources of error ranged from 33% (ACE inhibitor/ARB measure) to 81% (antiplatelet therapy measure) for the individual measures.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project

46,737 eligible patients

Methods

- Translated integrated measure specifications to data fields within practice EHRs
- Accuracy of CAD data elements were verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRs
- For two samples of patients, researchers completed a manual review of each patient's electronic chart
    - Sample 1: patients who appeared to fail the quality measure (did not meet numerator nor have exception)
    - Sample 2: patients who appeared to not meet the numerator and have an exception to the quality measure

Results

Performance rates calculated automatically by the data warehouse compared to the rates of performance, opportunities for improvement and misclassification rates determined with manually abstracted data samples

- Automated review alone: Overall performance for the three measures was 76.67% and varied among the measures:
    - Antiplatelet Therapy: 83.95%
    - Drug Therapy for Lowering LDL: 70.91%
    - Beta-blocker therapy for Prior MI: 69.17%
    - ACEI/ARB therapy: 75.66%
- Manual review alone: 25.37% of the cases were identified as failing to meet the measure (opportunities for improvement):
    - Antiplatelet Therapy: 48.26%
    - Drug Therapy for Lowering LDL: 7.66%
    - Beta-blocker therapy for Prior MI: 7.12%
    - ACEI/ARB therapy: 41.49%
- Discrepancies between performance measures based on EHRs automated review alone and those based on automated review plus manual review were due to two types of misclassification:
    - identify performance among true, eligible patients
    - failure to correctly exclude patients
- The overall rate of misclassification in the automatic calculation (identified from manual review) was 32.40% and varied across the measures:
    - Antiplatelet Therapy: 5.66%
    - Drug Therapy for Lowering LDL: 52.46%
    - Beta-blocker therapy for Prior MI: 60.56%
    - ACEI/ARB therapy: 11.06%

7. If automated reporting identifies a patient as meeting the measure, what likelihood is there that manual review will validate that finding?

This test has not yet been performed for this measure set.

8. Are the individual parts of the measure (numerator, denominator, exceptions) reliably calculated, as compared to the overall measure?

This test has not yet been performed for this measure set.

9. What proportion of patients that met the measure are correctly identified?

This test has not yet been performed for this measure set.

10. What proportion of patients that do not meet the measure are correctly identified?

AMA PCPI Testing Project: Cardio-HIT

Patients Automatically Identified as Exceptions	Agreement			
Measure	Mean Rate	S.E.	95% C.I.	N
All CAD Measures	92.57%	1.13%	90.26%, 94.88%	538
Antiplatelet Therapy	88.59%	3.19%	81.83%, 95.35%	99
Drug Therapy for Lowering LDL	93.85%	1.49%	90.75%, 96.96%	261
Beta-blocker Therapy for Prior MI	93.35%	2.78%	87.27%, 99.43%	80
ACE/ARB Therapy	92.53%	2.66%	86.79%, 98.26%	97

Patients Automatically Identified as Opportunities for Improvement	Agreement			
Measure	Mean Rate	S.E.	95 % C.I.	N
Coronary Artery Disease	25.37%	1.79%	21.78%, 28.96%	592
Antiplatelet Therapy	48.26%	3.62%	40.9%, 55.63%	190
Drug Therapy for Lowering LDL	7.66%	1.63%	4.26%, 11.05%	265
Beta-blocker Therapy for Prior MI	7.12%	3.48%	0%, 14.86%	55
ACE/ARB Therapy	41.49%	5.42%	30.26%, 52.73%	83

False Positive Opportunities for Improvement - Numerator Actually Met

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	31.57%	1.91%	27.74%, 35.4%	186.89	592
Antiplatelet Therapy	37.17%	3.50%	30.04%, 44.3%	70.71	190
Drug Therapy for Lowering LDL	30.95%	2.84%	25.19%, 36.71%	81.88	265
Beta-blocker Therapy for Prior MI	7.85%	3.64%	0%, 15.89%	4.29	55
ACE/ARB Therapy	36.37%	5.30%	25.38%, 47.36%	30.01	83

False Positive Opportunities for Improvement - Exceptions Actually Found, by Measure - Weighed Sample Data

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	10.66%	1.27%	8.09%, 13.23%	63.11	592
Antiplatelet Therapy	8.91%	2.07%	4.6%, 13.22%	16.95	190
Drug Therapy for Lowering LDL	8.93%	1.75%	5.31%, 12.56%	23.64	265
Beta-blocker Therapy for Prior MI	24.46%	5.81%	12.16%, 36.77%	13.38	55
ACE/ARB Therapy	11.08%	3.46%	3.7%, 18.46%	9.14	83

EHR "In Silo" Verification

Note: initially this may be of limited usefulness until EHR functionality and use progresses

11. Can EHR products reliably identify data elements and calculate these measures?

A "dummy" data set of patient data will be provided to several EHR vendors along with EHR measure specifications. The vendors will use this test file to determine if their system can reliably calculate the measures based on intended documentation patterns.

This test has not yet been performed for this measure set.

Predictive Validity	**12. Does high performance on these measures lead to better patient outcomes?** If the scientific evidence regarding the process of care is strong and widely accepted in the field, no formal evaluation of predictive validity is necessary. If the evidence is less strong, however, it is desirable to show that high performance leads to better patient outcomes. This test has not yet been performed for this measure set. Regarding hospital measures: Several articles published in 2006 and early 2007 have begun to assess the predictive validity of CMS Core Hospital Measures (acute myocardial infarction and heart failure) as they relate to short-term mortality rates.
Unintended Consequences	**13. Have monitoring and testing uncovered unexpected consequences of measurement?** Testing should be performed for anticipated unintended consequences. Unanticipated unintended consequences should be monitored for on a long term basis as they may only occur in later stages and widespread adoption. This test has not yet been performed for this measure set.
Project Descriptions	**Doctor's Office Quality Pilot Project** Data was captured at two large physician practice groups who use two distinct EHR systems. The study population of group 1 was their fee-for service Medicare patients. The study population was all non-Medicare patients for Group 2. Once the DOQ clinical measures were developed, the practices were given technical specifications to use to capture the quality measures from their EHR system. Feasibility was assessed for all measures, and some measures were implemented. **Persell Testing Project** Persell and team performed a retrospective electronic medical chart review comparing automated measurement with a 2-step process of automated measurement supplemented by review of free-text notes for apparent quality failures for all patients with CAD from a large internal medicine practice using a commercial EHR. The 7 performance measures included the following: Antiplatelet drug, lipid-lowering drug, beta-blocker following myocardial infarction, blood pressure measurement, lipid measurement, low-density lipoprotein cholesterol control, and angiotensin-converting enzyme inhibitor or angiotensin receptor blocker for patients with diabetes mellitus or left ventricular systolic dysfunction. **Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing** A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors. Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural). **Cardio-HIT Project** The AMA received funding for Phase II of the Cardio-HIT project from the Agency for Healthcare Research and Quality (AHRQ). The AMA in collaboration with five (5) physician practice sites, the Iowa Foundation for Medical Care, and the National Committee for Quality Assurance, conducted a 2-year, observational study of exception reporting, building on the prior work under *Cardio-HIT*, a research collaborative of six (6) EHRs-enabled independent group practices that collected data and reported on nationally recognized physician performance measures for coronary artery disease and heart failure. In *Cardio-HIT Phase II*, we: (1) empirically documented the prevalence and patterns of exception reporting in these measures; (2) assessed the feasibility and accuracy of exception reporting by validating a sample of reported exceptions against manual EHRs record review; and (3) analyzed and addressed stakeholder perspectives on exception reporting to refine existing principles in the design of physician performance measures**.**

Kappa Agreement	**Kappa** — **Strength of Agreement** 0.00 — Poor 0.01 – 0.20 — Slight 0.21 – 0.40 — Fair 0.41 – 0.60 — Moderate 0.61 – 0.80 — Substantial 0.81 – 0.99 — Almost perfect Landis, J.R. and Koch, G. G. (1977) "The measurement of observer agreement for categorical data" in Biometrics. Vol. 33, pp. 159—174

Clinical Topic	Chronic Stable Coronary Artery Disease (CAD)
Measure Title	ACE Inhibitor or ARB Therapy—Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
Measure #	PCPI # CAD-8 / PQRI # 118 / NQF # 0066
Measure Description	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease who also have diabetes or a current or prior LVEF < 40% who were prescribed ACE inhibitor or ARB therapy within a 12 month period
Measurement Period	Twelve consecutive months
Initial Patient Population	Patient Age: Patients aged 18 years and older before the start of measurement period Diagnosis Active: Patient has a diagnosis of coronary artery disease before or simultaneously to encounter date Encounter: At least two visits with the physician, physician's assistant, or nurse practitioner during the measurement period
Denominator Statement	All patients aged 18 and older with a diagnosis of coronary artery disease who also have diabetes or a current or prior LVEF < 40%
Numerator Statement	Patients who were prescribed ACE inhibitor or ARB therapy* within a 12 month period *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
Denominator Exceptions	Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, allergy, intolerance, pregnancy, renal failure due to ACE inhibitor, diseases of the aortic or mitral valve, other medical reasons) Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons) Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, lack of drug availability, other reasons attributable to the health care delivery system)

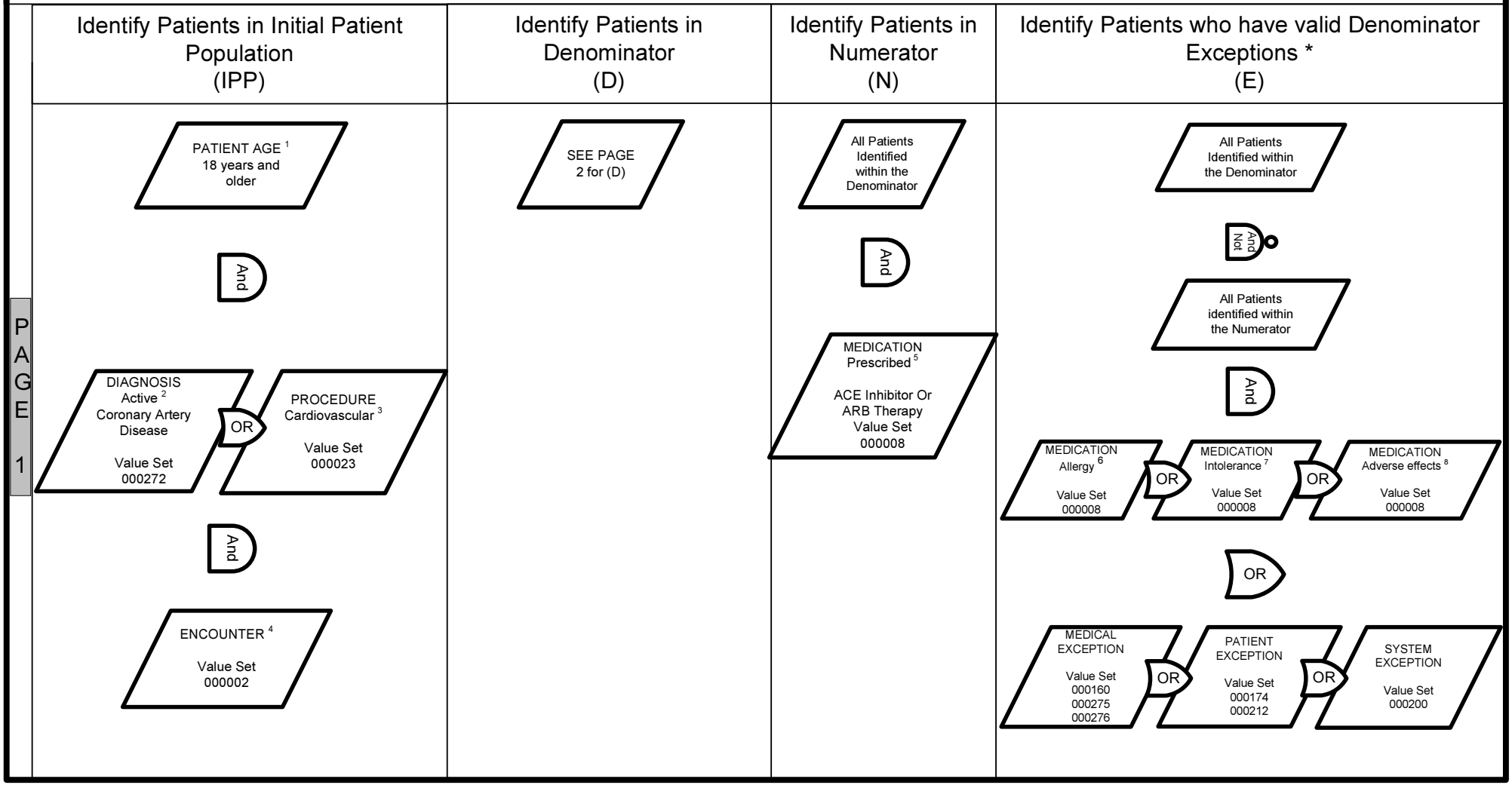
AMA - PCPI Level I EHR Specifications

Measure Logic for Chronic Stable Coronary Artery Disease (CAD): ACE Inhibitor or ARB Therapy—Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Measure Description: Percentage of patients aged 18 years and older with a diagnosis of CAD who also have diabetes or any current or prior LVEF < 40% who were prescribed ACE inhibitor or ARB therapy within a 12 month period

Measurement Period: 12 Consecutive Months

PCPI Measure #: CAD-8 / PQRI # 118 / NQF # 0066



PARAMETER SPECIFICATIONS (Value Sets are found in the Coding Appendices):

IPP: [1] Patient Age: 18 years and older before the start of measurement period; [2] Diagnosis, Active: before or simultaneously to encounter date; [3] Procedure Cardiovascular: before or simultaneously to encounter date; [4] Encounter: ≥ to 2 visits during measurement period

N: [5] Medication, Prescribed: active or ordered during the measurement period;

E: [6] Medication Allergy, [7] Medication Intolerance, [8] Medication Adverse Effects: the value set listed references the medications to which an allergy, intolerance, or adverse effect exist; Value Sets 000160, 000174, 000200, 000275, 000212 during the measurement period; all other Value Sets starts before or simultaneously to measurement period.

* Coded examples are NOT intended to be an exhaustive list. Exceptions will vary for each patient and situation.

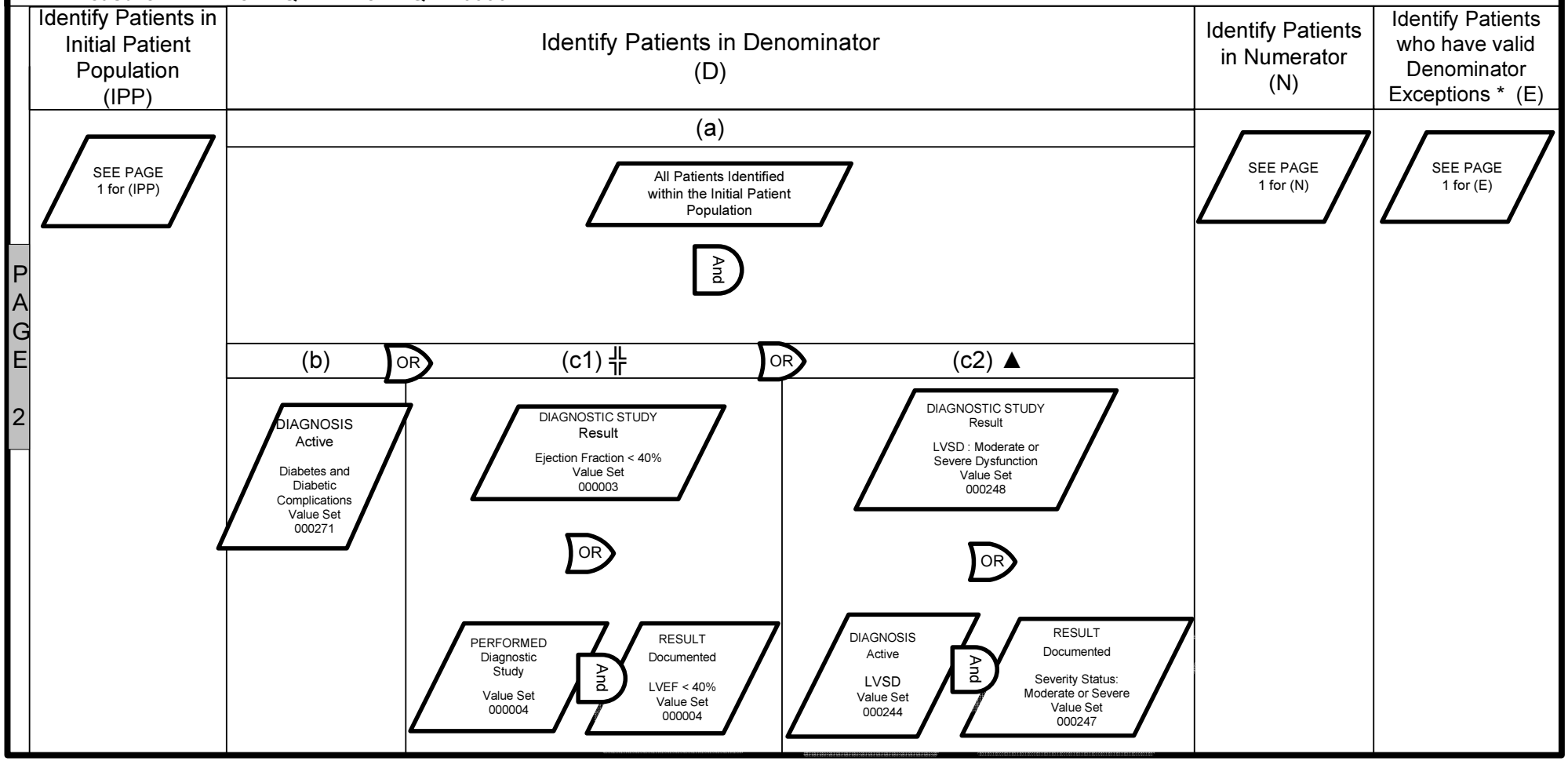
AMA - PCPI Level I EHR Specifications

Measure Logic for Chronic Stable Coronary Artery Disease (CAD): ACE Inhibitor or ARB Therapy—Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Measure Description: Percentage of patients aged 18 years and older with a diagnosis of CAD who also have diabetes or any current or prior LVEF < 40% who were prescribed ACE inhibitor or ARB therapy within a 12 month period

Measurement Period: 12 Consecutive Months

PCPI Measure #: CAD-8 / PQRI # 118 / NQF # 0066



FLOW DIAGRAM INSTRUCTIONS:
For D: (a) is applicable to all calculations; (b), (c1) & (c2): the majority of patients will fall into (b) OR (c1) OR (c2), in the event that a patient falls into BOTH (b) and (c), please follow (c1) or (c2), as it applies;
For N: all of (D) is applicable to (N);

PARAMETER SPECIFICATIONS (Value Sets are found in the Coding Appendices):
D (All in (D) occurring before or simultaneously to measurement period):
╬ Corresponds to Quantitative representation of results documented as a numerical value in percentage format;
▲ Corresponds to Qualitative representation of results, numeric equivalents as follows (crosswalk):
Hyperdynamic: corresponds to LVEF greater than 70%
Normal: corresponds to LVEF 50% to 70% (midpoint 60%)
Mild dysfunction: corresponds to LVEF 40% to 49% (midpoint 45%)
Moderate dysfunction: corresponds to LVEF 30% to 39% (midpoint 35%)
Severe dysfunction: corresponds to LVEF less than 30%

Basic Measure Calculation:

$$\frac{(N)}{(D) - (E)} = \%$$

The PCPI strongly recommends that exception rates also be computed and reported alongside performance rates as follows:

Exception Calculation:

$$\frac{(E)}{(D)} = \%$$

Exception Types:
E= E1 (Medical Exceptions) + E2 (Patient Exceptions) + E3 (System Exceptions)
For patients who have more than one valid exception, only one exception should be be counted when calculating the exception rate

Initial Patient Population (IPP)	Denominator (D)	Numerator (N)	Denominator Exceptions (E)
Definition: The initial patient population identifies the general group of patients that the performance measureis designed to address; usually focused on a specific clinical condition (e.g., coronary artery disease, asthma). For example, a patient aged 18 years and older with a diagnosis of CADwho has at least 2 Visits during the measurement period.	**Definition:** The denominator defines the specific group of patients for inclusion in a specific performance measure based on specific criteria (e.g., patient's age, diagnosis, prior MI). In some cases, the denominator may be I dentical to the initial patient population.	**Definition:** The numerator defines the group of patients in the denominator for whom a process or outcome of care occurs (e.g., flu vaccine received).	**Definition:** Denominator exceptions are the valid reasons why patients who are included in the denominator population did not receive a process or outcome of care (described in the numerator). Patients may have Denominator Exceptions for medical reasons (e.g., patient has an egg allergy so they did not receive flu vaccine); patient reasons (e.g., patient declined flu vaccine); or system reasons (e.g., patient did not receive flu Vaccine due to vaccine shortage). These cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported. This group of patients constitutes the Denominator Exception reporting population – patients for whom the numerator was not achieved and a there is a valid Denominator Exception.
Find the patients who meet the Initial Patient Population criteria (IPP)	Find the patients who qualify for the denominator (D): ○ From the patients within the Patient Population criteria (IPP) select those people who meet Denominator selection criteria. (In some cases the IPP and D are identical).	Find the patients who qualify for the Numerator (N): ○ From the patients within the Denominator (D) criteria, select those people who meet Numerator selection criteria. ○ Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator	From the patients who did not meet the Numerator criteria, determine if the patient meets any criteria for the Denominator Exception (E1 + E2+E3). If they meet any criteria, they should be removed from the Denominator for performance calculation. As a point of reference, these cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported.

AMA-PCPI Level I EHR Specification
Chronic Stable Coronary Artery Disease
ACE Inhibitor or ARB Therapy-Diabetes or Left Ventricular Systolic Dysfunction (LVEF<40%) (CAD-8)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.00	AMI ANTEROLATERAL,UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.01	AMI ANTEROLATERAL, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.02	AMI ANTEROLATERAL,SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.10	AMI ANTERIOR WALL,UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.11	AMI ANTERIOR WALL, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.12	AMI ANTERIOR WALL,SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.20	AMI INFEROLATERAL,UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.21	AMI INFEROLATERAL, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.22	AMI INFEROLATERAL,SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.30	AMI INFEROPOST, UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.31	AMI INFEROPOST, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.32	AMI INFEROPOST, SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.40	AMI INFERIOR WALL,UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.41	AMI INFERIOR WALL, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.42	AMI INFERIOR WALL,SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.50	AMI LATERAL NEC, UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.51	AMI LATERAL NEC, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.52	AMI LATERAL NEC, SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.60	TRUE POST INFARCT,UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.61	TRUE POST INFARCT, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.62	TRUE POST INFARCT,SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.70	SUBENDO INFARCT, UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.71	SUBENDO INFARCT, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.72	SUBENDO INFARCT, SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.80	AMI OTHER SPEC SITE, UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.81	AMI OTHER SPEC SITE, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.82	AMI OTHER SPEC SITE, SUBSEQ
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.90	AMI NOS, UNSPEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.91	AMI NOS, INITIAL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.92	AMI NOS, SUBSEQUENT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.0	POST MI SYNDROME
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.1	INTERMED CORONARY SYND
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.81	ACUTE COR OCCLSN W/O MI
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.89	AC ISCHEMIC HRT DIS NEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	412	OLD MYOCARDIAL INFARCT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.0	ANGINA DECUBITUS
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.1	PRINZMETAL ANGINA
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.9	ANGINA PECTORIS NEC/NOS
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.00	COR ATH UNSPEC VESSEL NTV/GRAFT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.01	COR ATH NATVE VESSEL
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.02	COR ATH ATLG VN BPS GRAFT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.03	COR ATH NONATLG BIO GRAFT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.04	COR ATH MAMMARY ART BPS GRAFT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.05	COR ATH BPS GRAFT NOS
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.06	COR ATH NATV ART TP HRT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.07	COR ATH BPS GRAFT TP HRT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.8	CHR ISCHEMIC HRT DIS NEC
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.9	CHR ISCHEMIC HRT DIS NOS
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	V45.81	STATUS-POST AORTOCOR BPS GRAFT
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	V45.82	STATUS-POST PTCA
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.0	Unstable Angina
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.1	Angina pectoris with documented spasm

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.8	Other forms of angina pectoris, Angina equivalent
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.9	Angina pectoris, unspecified
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery/ST elevation (STEMI) myocardial infarction involving diagonal coronary artery
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall (Acute transmural myocardial infarction of anterior wall)
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.11	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Inferoposterior transmural (Q wave) infarction (acute)
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Acute transmural myocardial infarction of inferior wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.21	ST elevation (STEMI) myocardial infarction involving left circulflex coronary artery, ST elevation (STEMI) myocardial infarction involving oblique marginal coronary artery
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.29	ST elevation (STEMI) myocardial infarction involving other sites Acute transmural myocardial infarction of other sites
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.3	ST elevation (STEMI) myocardial infarction of unspecified site Acute transmural myocardial infarction of unspecified site Myocardial infarction (acute) NOS
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.4	Non-ST elevation (NSTEMI) myocardial infarction Acute subendocardial myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall/ Subsequent acute transmural myocardial infarction of anterior wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall Subsequent acute transmural myocardial infarction of inferior wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction Subsequent acute subendocardial myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites Subsequent acute transmural myocardial infarction of other sites
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site Subsequent acute myocardial infarction of unspecified site
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I23.7	Postinfarction angina
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.0	Acute coronary thrombosis not resulting in myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.1	Dressler's syndrome
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.8	Other forms of acute ischemic heart disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.9	Acute ischemic heart disease, unspecified
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.2	Old myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.5	Ischemic cardiomyopathy
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.6	Silent myocardial ischemia
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.82	Chronic total occlusion of coronary artery Complete occlusion of coronary artery Total occlusion of coronary artery
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.89	Other forms of chronic ischemic heart disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.9	Chronic ischemic heart disease, unspecified
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	Z95.1	Presence of aortocoronary bypass graft
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	Z95.5	Presence of coronary angioplasty implant and graft
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	10365005	right main coronary artery thrombosis
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	1755008	old myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	10273003	acute infarction of papillary muscle
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	15990001	acute myocardial infarction of posterolateral wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	22298006	myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	28248000	left anterior descending coronary artery thrombosis
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	29899005	coronary artery embolism
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	30277009	acute myocardial infarction with rupture of ventricle
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	32574007	past myocardial infarction diagnosed on ECG AND/OR other special investigation, but currently presenting no symptoms
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	42531007	microinfarct of heart
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	50570003	aneurysm of coronary vessels
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	52035003	acute anteroapical myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	53741008	coronary arteriosclerosis
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	54329005	acute myocardial infarction of anterior wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	57054005	acute myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	58612006	acute myocardial infarction of lateral wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	62695002	acute anteroseptal myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	63739005	coronary occlusion
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	65547006	acute myocardial infarction of inferolateral wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	67682002	coronary artery atheroma
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	70211005	acute myocardial infarction of anterolateral wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	70422006	acute subendocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	73795002	acute myocardial infarction of inferior wall
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	74218008	coronary artery arising from main pulmonary artery
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	75398000	anomalous origin of coronary artery
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	79009004	acute myocardial infarction of septum
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	87343002	prinzmetal angina

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	92517006	calcific coronary arteriosclerosis
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	123641001	left coronary artery occlusion
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	123642008	right coronary artery occlusion
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	129574000	postoperative myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	161502000	H/O: myocardial infarct at less than 60
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	161503005	H/O: myocardial infarct at greater than 60
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194798004	acute anteroapical infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194802003	true posterior myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194809007	acute myocardial infarction of atrium
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	194842008	single coronary vessel disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	194843003	double coronary vessel disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194856005	subsequent myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	233817007	triple vessel disease of the heart
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233835003	acute widespread myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233838001	acute posterior myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233839009	old anterior myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233840006	old inferior myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233841005	old lateral myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233842003	old posterior myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233843008	silent myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	233970002	coronary artery stenosis
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	275905002	H/O: myocardial problem
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	304914007	acute Q wave myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	307140009	acute non-Q wave infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	308065005	H/O: Myocardial infarction in last year
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	314207007	non-Q wave myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	315348000	asymptomatic coronary heart disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	371068009	myocardial infarction with complication
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371803003	multi vessel coronary artery disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371804009	left main coronary artery disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371805005	significant coronary bypass graft disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	394710008	first myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	398274000	coronary artery thrombosis
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	399211009	history of - myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	401303003	acute ST segment elevation myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	401314000	acute non-ST segment elevation myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	408546009	coronary artery bypass graft occlusion
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	418044006	myocardial infarction in recovery phase
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	420006002	obliterative coronary artery disease
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	421327009	coronary artery stent thrombosis
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	427919004	coronary arteriosclerosis due to radiation
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	428196007	mixed myocardial ischemia and infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	428752002	recent myocardial infarction
000272	CAD	8	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	429245005	recurrent coronary arteriosclerosis after percutaneous transluminal coronary angioplasty
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33140	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33510	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33511	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33512	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33513	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33514	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33516	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33517	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33518	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33519	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33521	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33522	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33523	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33533	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33534	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33535	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	33536	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	92980	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	92981	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	92982	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	92984	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	92995	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	CPT	92996	
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	3546002	aortocoronary artery bypass graft with saphenous vein graft
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	10326007	coronary artery bypass with autogenous graft, three grafts
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	15256002	transmyocardial revascularization by laser technique
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	30670000	anastomosis of thoracic artery to coronary artery, double
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	39202005	coronary artery bypass with autogenous graft, four grafts
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	39724006	anastomosis of internal mammary artery to coronary artery, double vessel
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	48431000	anastomosis of thoracic artery to coronary artery, single
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	74371005	coronary artery bypass with autogenous graft, two grafts
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	81266008	heart revascularization
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	82247006	coronary artery bypass with autogenous graft, five grafts
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	90205004	cardiac revascularization with bypass anastomosis
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	119564002	internal mammary-coronary artery bypass graft
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	119565001	coronary artery bypass graft, anastomosis of artery of thorax to coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	174911007	revascularization of wall of heart
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175007008	saphenous vein graft replacement of one coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175008003	saphenous vein graft replacement of two coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175009006	saphenous vein graft replacement of three coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175011002	saphenous vein graft replacement of four or more coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175012009	other specified saphenous vein graft replacement of coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175021005	allograft bypass of coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175022003	allograft replacement of one coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175024002	allograft replacement of two coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175025001	allograft replacement of three coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175026000	allograft replacement of four or more coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175036008	revision of bypass for coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175037004	revision of bypass for one coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175038009	revision of bypass for two coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175039001	revision of bypass for three coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175040004	revision of bypass for four or more coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175041000	revision of connection of thoracic artery to coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175045009	connection of mammary artery to coronary artery

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175047001	double implantation of mammary arteries into coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175048006	single anastomosis of mammary artery to left anterior descending coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175050003	single implantation of mammary artery into coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175053001	connection of other thoracic artery to coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	175058005	other specified connection of other thoracic artery to coronary artery
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	232717009	coronary artery bypass graft
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	232719007	coronary artery bypass graft x 1
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	232720001	coronary artery bypass grafts x 2
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	232721002	coronary artery bypass grafts x 3
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	232722009	coronary artery bypass grafts x 4
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	232723004	coronary artery bypass grafts x 5
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	232724005	coronary artery bypass grafts greater than 5
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	265481001	double anastomosis of mammary arteries to coronary arteries
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	275215001	LIMA single anastomosis
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	275216000	RIMA single anastomosis
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	275227003	myocardial revascularization
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	275252001	LIMA sequential anastomosis
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	275253006	RIMA sequential anastomosis
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	287277008	indirect heart revascularization
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	309814006	aortocoronary bypass grafting
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	359597003	single internal mammary-coronary artery bypass
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	359601003	coronary artery bypass with autogenous graft of internal mammary artery, single graft
000023	CAD	8	IPP	Cardiac Surgery	Procedure	SNM	414088005	emergency CABG
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99201	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99202	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99203	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99204	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99205	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99212	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99213	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99214	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99215	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99241	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99242	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99243	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99244	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99245	
000002	CAD	8	IPP	Encounter Nursing Facility	Encounter	CPT	99304	
000002	CAD	8	IPP	Encounter Nursing Facility	Encounter	CPT	99305	
000002	CAD	8	IPP	Encounter Nursing Facility	Encounter	CPT	99306	
000002	CAD	8	IPP	Encounter Nursing Facility	Encounter	CPT	99307	
000002	CAD	8	IPP	Encounter Nursing Facility	Encounter	CPT	99308	
000002	CAD	8	IPP	Encounter Nursing Facility	Encounter	CPT	99309	
000002	CAD	8	IPP	Encounter Nursing Facility	Encounter	CPT	99310	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99324	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99325	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99326	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99327	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99328	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99334	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99335	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99336	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99337	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99341	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99342	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99343	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99344	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99345	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99347	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99348	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99349	
000002	CAD	8	IPP	Encounter Outpatient	Encounter	CPT	99350	
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.00	DMII W/O CMP NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.01	DMI W/O CMP NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.02	DMII W/O CMP UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.03	DMI W/O CMP UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.10	DMII W KETOACID NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.11	DMI W KETOACID NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.12	DMII W KETOACID UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.13	DMI W KETOACID UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.20	DMII W HYPEROSMO NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.21	DMI W HYPEROSMO NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.22	DMII W HYPEROSMO UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.23	DMI W HYPEROSMO UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.30	DMII W OTH COMA NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.31	DMI W OTH COMA NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.32	DMII W OTH COMA UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.33	DMI W OTH COMA UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.40	DMII W RENAL MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.41	DMI W RENAL MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.42	DMII W RENAL MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.43	DMI W RENAL MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.50	DMII W OPHTH MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.51	DMI W OPHTH MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.52	DMII W OPHTH MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.53	DMI W OPHTH MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.60	DMII W NEURO MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.61	DMI W NEURO MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.62	DMII W NEURO MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.63	DMI W NEURO MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.70	DMII W PERIPH CIRC DISORDER NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.71	DMI W PERIPH CIRCDISORDER NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.72	DMII W PERIPH CIRC DISORDER UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.73	DMI W PERIPH CIRC DISORDER UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.80	DMII W OTH SPEC MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.81	DMI W OTH SPEC MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.82	DMII W OTH SPEC MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.83	DMI W OTH SPEC MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.90	DMII W UNSPEC MANIFEST NT ST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.91	DMI W UNSPEC MANIFEST NT ST UNCNTRLD

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.92	DMII W UNSPEC MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I9	250.93	DMI W UNSPF MANIFEST UNCNTRLD
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.10	Type 1 diabetes mellitus with ketoacidosis without coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.11	Type 1 diabetes mellitus with ketoacidosis with coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.21	Type 1 diabetes mellitus with diabetic nephropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.22	Type 1 diabetes mellitus with diabetic chronic kidney disease
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.29	Type 1 diabetes mellitus with other diabetic kidney complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.311	Type 1 idabetes mellitus with unspecified diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.319	Type 1 diabetes mellitus with unspecified diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.321	Type 1 idabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.329	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E100.331	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.339	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.341	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.349	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.351	Type 1 diahetes mellitus with proliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.359	Type 1 diahetes mellitus with proliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.36	Type 1 diabetes mellitus with diabetic cataract
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.39	Type 1 diabetes mellitus with other diabetic ophthalmic complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.40	Type 1 diabetes mellitus with diabetic neuropathy, unspecified
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.41	Type 1 diabetes mellitus with diabetic mononeuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.42	Type 1 diabetes mellitus with diabetic polyneuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.43	Type 1 diabetes mellitus with diabetic autonomic (poly)neuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.44	Type 1 diabetes mellitus with diabetic anyotrophy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.49	Type 1 diabetes mellitus with other diabetic neurological complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.51	Type 1 diabetes mellitus with diabetic peripheral angiopathy without gangrene
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.52	Type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.59	Type 1 diabetes mellitus with other circulatory complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.610	Type 1 diabetes mellitus with diabetic neuropathic arthropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.618	Type 1 diabetes mellitus with other diabetic arthropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.620	Type 1 diabetes mellitus with diabetic dermatitis
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.621	Type 1 diabetes mellitus with foot ulcer
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.622	Type 1 diabetes mellitus with other skin ulcer

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.628	Type 1 diabetes mellitus with other skin ulceration
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.630	Type 1 diabetes mellitus with periodontal disease
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.638	Type 1 diabetes mellitus with other oral complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.641	Type 1 diabetes mellitus with hypoglycemia with coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.649	Type 1 diabetes mellitus with hypoglycemia with coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.65	Type 1 diabetes mellitus with hypoglycemia without coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.69	Type 1 diabetes mellitus with other specified
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.8	Type 1 diabetes mellitus with unspecified complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E10.9	Type 1 diabetes mellitus without complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.00	Type 2 diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar come (NKHHC)
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.01	Type 2 diabetes mellitus with hyperosmolarity with coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.21	Type 2 diabetes mellitus with diabetic nephropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.22	Type 2 diabetes mellitus with diabetic chronic kidney disease
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.29	Type 2 diabetes mellitus with other diabetic kidney complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.311	Type 2 diabetes mellitus with unspecified diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.319	Type 2 diabetes mellitus with unspecified diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.321	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.329	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.331	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.339	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.341	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.349	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.351	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.359	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.36	Type 2 diabetes mellitus with diabetic cataract
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.39	Type 2 diabetes mellitus with other diabetic ophthalmic complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.40	Type 2 diabetes mellitus with diabetic neuropathy, unspeicified
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.41	Type 2 diabetes mellitus with diabetic mononeuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.42	Type 2 diabetes mellitus with diabetic polyneuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.43	Type 2 diabetes mellitus with diabetic autonomic polyneuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.44	Type 2 diabetes mellitus with diabetic amyotrophic
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.49	Type 2 diabetes mellitus with other diabetic neurological complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.51	Type 2 diabetes mellitus with diabetic peripheral angiopathy without gangrene

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.52	Type 2 diabetes mellitus with diabetic peripheral angiopathy with gangrene
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.59	Type 2 diabetes mellitus with other circulatory complicatons
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.610	Type 2 diabetes mellitus with diabetic neuropathic arthropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.618	Type 2 diabetes mellitus with other diabetic arthropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.620	Type 2 diabetes mellitus with diabetic dermatitis
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.621	Type 2 diabetes mellitus with foot ulcer
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.622	Type 2 diabetes mellitus with other skin ulcer
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.628	Type 2 diabetes mellitus with other skin complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.630	Type 2 diabetes mellitus with periodontal disease
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.638	Type 2 diabetes mellitus with other oral disease
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.641	Type 2 diabetes mellitus with hypoglycemia with coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.8	Type 2 diabetes mellitus with unspecified complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E11.9	Type 2 diabetes mellitus without complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.00	Other specified diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.01	Other specified diabetes mellitus with hyperosmolarity with coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.10	Other specified diabetes mellitus with ketoacidosis without coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.11	Other specified diabetes mellitus with ketoacidosis with coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.21	Other specified diabetes mellitus with diabetic nephropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.22	Other specified diabetes mellitus with diabetic chronic kidney disease
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.29	Other specified diabetes mellitus with other diabetic kidney complication; Other specified diabetes mellitus with renal tubular degeneration
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.311	Other specified diabetes mellitus with unspecified diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.319	Other specified diabetes mellitus with unspecified diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.321	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.329	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.331	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.339	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.341	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.349	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.351	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.359	Other specified diabetes mellitus with proliferative diabetic retinopathy without macular edema
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.36	Other specified diabetes mellitus with diabetic cataract
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.39	Other specified diabetes mellitus with other diabetic ophthalmic complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.40	Other specified diabetes mellitus with diabetic neuropathy, unspecified
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.41	Other specified diabetes mellitus with diabetic mononeuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.42	Other specified diabetes mellitus with diabetic polyneuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.43	Other specified diabetes mellitus with diabetic autonomic (poly)neuropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.44	Other specified diabetes mellitus with diabetic amyotrophy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.49	Other specified diabetes mellitus with other diabetic neurological complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.51	Other diabetes mellitus with diabetic peripheral angiopathy without gangrene
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.52	Other specified diabetes mellitus with diabetic peripheral angiopathy with gangrene
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.59	Other specified diabetes mellitus with other circulatory complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.610	Other specified diabetes mellitus with diabetic neuropathic arthropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.618	Other specified diabetes mellitus with other diabetic arthropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.620	Other specified diabetes mellitus with diabetic dermatitis
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.621	Other specified diabetes mellitus with foot ulcer
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.622	Other specified diabetes mellitus with other skin ulcer
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.628	Other specified diabetes mellitus with other skin complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.630	Other specified diabetes mellitus with periodontal disease
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.638	Other specified diabetes mellitus with other oral complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.641	Other specified diabetes mellitus with hypoglycemia with coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.649	Other specified diabetes mellitus with hypoglycemia without coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.65	Other specified diabetes mellitus with hyperglycemia
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.69	Other specified diabetes mellitus with other specified complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.8	Other specified diabetes mellitus with unspecified complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	I10	E13.9	Other specified diabetes mellitus without complications
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	5969009	diabetes mellitus associated with genetic syndrome
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	9859006	insulin-resistant diabetes mellitus AND acanthosis nigricans
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	11530004	brittle diabetes
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	23045005	insulin dependent diabetes mellitus type IA
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	28032008	insulin dependent diabetes mellitus type IB
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	28453007	maturity onset diabetes mellitus in young
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	33559001	pineal hyperplasia AND diabetes mellitus syndrome
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	42954008	diabetes mellitus associated with receptor abnormality
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	44054006	diabetes mellitus type 2
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	46635009	diabetes mellitus type 1

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	51002006	diabetes mellitus associated with pancreatic disease
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	57886004	protein-deficient diabetes mellitus
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	59079001	diabetes mellitus associated with hormonal etiology
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	70694009	diabetes mellitus AND insipidus with optic atrophy AND deafness
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	73211009	diabetes mellitus
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	75682002	diabetes mellitus due to insulin receptor antibodies
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	81531005	diabetes mellitus type 2 in obese
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	91352004	diabetes mellitus due to structurally abnormal insulin
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	111552007	diabetes mellitus without complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	199229001	pre-existing diabetes mellitus, insulin-dependent
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	199230006	pre-existing diabetes mellitus, non-insulin-dependent
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	237599002	insulin-treated non-insulin-dependent diabetes mellitus
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	237604008	diabetes mellitus autosomal dominant type II
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	267379000	diabetes mellitus, juvenile type, with no mention of complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	267380002	diabetes mellitus, adult onset, with no mention of complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	275918005	unstable diabetes
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	290002008	unstable type I diabetes mellitus
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	313435000	Type I diabetes mellitus without complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	313436004	Type II diabetes mellitus without complication
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	314771006	Type I diabetes mellitus with hypoglycemic coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	314772004	Type II diabetes mellitus with hypoglycemic coma
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	314893005	Type I diabetes mellitus with arthropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	314902007	Type II diabetes mellitus with peripheral angiopathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	314903002	Type II diabetes mellitus with arthropathy
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	359638003	NIDDM in nonobese
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	359642000	diabetes mellitus type 2 in nonobese
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	426705001	diabetes mellitus associated with cystic fibrosis
000271	CAD	8	D	Diabetes and Diabetic Complications	Diagnosis/Condition/Problem	SNM	426875007	latent autoimmune diabetes mellitus in adult
000003	CAD	8	D	Ejection Fraction	Diagnostic Study	SNM	70822001	LEFT VENTRICULAR EJECTION FRACTION
000003	CAD	8	D	Ejection Fraction	Diagnostic Study	SNM	250907009	LEFT VENTRICULAR FUNCTION
000003	CAD	8	D	Ejection Fraction	Diagnostic Study	SNM	250908004	CARDIAC EJECTION FRACTION
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	78454	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	78468	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	78472	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	78473	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	78481	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	78483	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	78494	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	78496	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93303	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93304	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93306	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93307	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93308	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93312	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93313	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93314	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93315	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93316	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93317	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93350	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93351	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93352	
000004	CAD	8	D	LVF Assmt	Diagnostic Study	CPT	93543	
000248	CAD	8	D	LVSD : Moderate or Severe Dysfunction	Diagnostic Study	SNM	10189741000046100	Moderate left ventricular systolic dysfunction (disorder)
000248	CAD	8	D	LVSD : Moderate or Severe Dysfunction	Diagnostic Study	SNM	10189751000046100	Severe left ventricular systolic dysfunction (disorder)
000244	CAD	8	D	LVSD	Diagnosis/Condition/Problem	SNM	134401001	
000247	CAD	8	D	Severity Status	Result	SNM	6736007	Moderate (severity)
000247	CAD	8	D	Severity Status	Result	SNM	24484000	Severe (Severity)
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	744874	Amlodipine 10 MG / benazepril 20 MG Oral Capsule [Lotrel 10/20]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	744882	Amlodipine 2.5 MG / benazepril 10 MG Oral Capsule [Lotrel 2.5/10]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	744886	Amlodipine 5 MG / benazepril 10 MG Oral Capsule [Lotrel 5/10]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	744890	Amlodipine 5 MG / benazepril 20 MG Oral Capsule [Lotrel 5/20]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308608	benazepril 10 MG / Hydrochlorothiazide 12.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207887	benazepril 10 MG / Hydrochlorothiazide 12.5 MG Oral Tablet [Lotensin HCT]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308607	benazepril 10 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207780	benazepril 10 MG Oral Tablet [Lotensin]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308610	benazepril 20 MG / Hydrochlorothiazide 12.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	209012	benazepril 20 MG / Hydrochlorothiazide 12.5 MG Oral Tablet [Lotensin HCT]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308611	benazepril 20 MG / Hydrochlorothiazide 25 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207917	benazepril 20 MG / Hydrochlorothiazide 25 MG Oral Tablet [Lotensin HCT]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308609	benazepril 20 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207792	benazepril 20 MG Oral Tablet [Lotensin]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308612	benazepril 40 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207800	benazepril 40 MG Oral Tablet [Lotensin]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	313866	benazepril 5 MG / Hydrochlorothiazide 6.25 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207881	benazepril 5 MG / Hydrochlorothiazide 6.25 MG Oral Tablet [Lotensin HCT]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308613	benazepril 5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207820	benazepril 5 MG Oral Tablet [Lotensin]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	805863	candesartan cilexetil 16 MG / Hydrochlorothiazide 12.5 MG Oral Tablet [Atacand HCT 16/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	639539	candesartan cilexetil 16 MG Oral Tablet [Atacand]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	805859	candesartan cilexetil 32 MG / Hydrochlorothiazide 12.5 MG Oral Tablet [Atacand HCT 32/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	639543	candesartan cilexetil 32 MG Oral Tablet [Atacand]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	577785	candesartan cilexetil 4 MG Oral Tablet [Atacand]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	577787	candesartan cilexetil 8 MG Oral Tablet [Atacand]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308962	Captopril 100 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	210994	Captopril 100 MG Oral Tablet [Capoten]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308963	Captopril 12.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	201370	Captopril 12.5 MG Oral Tablet [Capoten]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	197436	Captopril 25 MG / Hydrochlorothiazide 15 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	211053	Captopril 25 MG / Hydrochlorothiazide 15 MG Oral Tablet [Capozide 25/15]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	197437	Captopril 25 MG / Hydrochlorothiazide 25 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	211072	Captopril 25 MG / Hydrochlorothiazide 25 MG Oral Tablet [Capozide 25/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	317173	Captopril 25 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	201372	Captopril 25 MG Oral Tablet [Capoten]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	197438	Captopril 50 MG / Hydrochlorothiazide 15 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	790297	Captopril 50 MG / Hydrochlorothiazide 15 MG Oral Tablet [Capozide 50/15]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	197439	Captopril 50 MG / Hydrochlorothiazide 25 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	790296	Captopril 50 MG / Hydrochlorothiazide 25 MG Oral Tablet [Capozide 50/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	308964	Captopril 50 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	201374	Captopril 50 MG Oral Tablet [Capoten]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	846148	Diltiazem Hydrochloride 180 MG / Enalapril Maleate 5 MG Extended Release Tablet [Teczem]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858823	Enalapril Maleate 1.25 MG/ML Injectable Solution [Vasotec]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858828	Enalapril Maleate 10 MG / Hydrochlorothiazide 25 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858830	Enalapril Maleate 10 MG / Hydrochlorothiazide 25 MG Oral Tablet [Vaseretic]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858817	Enalapril Maleate 10 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858819	Enalapril Maleate 10 MG Oral Tablet [Vasotec]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858804	Enalapril Maleate 2.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858806	Enalapril Maleate 2.5 MG Oral Tablet [Vasotec]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858810	Enalapril Maleate 20 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858812	Enalapril Maleate 20 MG Oral Tablet [Vasotec]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858884	Enalapril Maleate 5 MG / Felodipine 2.5 MG Extended Release Tablet [Lexxel 5/2.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858892	Enalapril Maleate 5 MG / Felodipine 5 MG Extended Release Tablet [Lexxel 5/5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858824	Enalapril Maleate 5 MG / Hydrochlorothiazide 12.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858827	Enalapril Maleate 5 MG / Hydrochlorothiazide 12.5 MG Oral Tablet [Vaseretic]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858813	Enalapril Maleate 5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	858815	Enalapril Maleate 5 MG Oral Tablet [Vasotec]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	204404	Enalaprilat 1.25 MG/ML Injectable Solution
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	261300	eprosartan 400 MG Oral Tablet [Teveten]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	352335	eprosartan 600 MG / Hydrochlorothiazide 12.5 MG Oral Tablet [Teveten HCT]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	261301	eprosartan 600 MG Oral Tablet [Teveten]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857166	Fosinopril Sodium 10 MG / Hydrochlorothiazide 12.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857182	Fosinopril Sodium 10 MG / Hydrochlorothiazide 12.5 MG Oral Tablet [Monopril-HCT 10/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857169	Fosinopril Sodium 10 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857171	Fosinopril Sodium 10 MG Oral Tablet [Monopril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857174	Fosinopril Sodium 20 MG / Hydrochlorothiazide 12.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857183	Fosinopril Sodium 20 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857185	Fosinopril Sodium 20 MG Oral Tablet [Monopril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857187	Fosinopril Sodium 40 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	857189	Fosinopril Sodium 40 MG Oral Tablet [Monopril]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823934	Hydrochlorothiazide 12.5 MG / irbesartan 150 MG Oral Tablet [Avalide 150/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823938	Hydrochlorothiazide 12.5 MG / irbesartan 300 MG Oral Tablet [Avalide 300/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	197885	Hydrochlorothiazide 12.5 MG / Lisinopril 10 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207961	Hydrochlorothiazide 12.5 MG / Lisinopril 10 MG Oral Tablet [Prinzide]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823986	Hydrochlorothiazide 12.5 MG / Lisinopril 10 MG Oral Tablet [Zestoretic 10/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	197886	Hydrochlorothiazide 12.5 MG / Lisinopril 20 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207963	Hydrochlorothiazide 12.5 MG / Lisinopril 20 MG Oral Tablet [Prinzide]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823982	Hydrochlorothiazide 12.5 MG / Lisinopril 20 MG Oral Tablet [Zestoretic 20/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823954	Hydrochlorothiazide 12.5 MG / Losartan 100 MG Oral Tablet [Hyzaar 100/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823958	Hydrochlorothiazide 12.5 MG / Losartan 50 MG Oral Tablet [Hyzaar 50/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	891618	Hydrochlorothiazide 12.5 MG / moexipril 15 MG Oral Tablet [Uniretic 15/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	891622	Hydrochlorothiazide 12.5 MG / moexipril 7.5 MG Oral Tablet [Uniretic 7.5/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	847060	Hydrochlorothiazide 12.5 MG / Olmesartan medoxomil 20 MG Oral Tablet [Benicar HCT 20/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	847055	Hydrochlorothiazide 12.5 MG / Olmesartan medoxomil 40 MG Oral Tablet [Benicar HCT 40/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	809854	Hydrochlorothiazide 12.5 MG / quinapril 10 MG Oral Tablet [Accuretic 10/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	802035	Hydrochlorothiazide 12.5 MG / quinapril 10 MG Oral Tablet [Quinaretic 12.5/10]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	809858	Hydrochlorothiazide 12.5 MG / quinapril 20 MG Oral Tablet [Accuretic 20/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	802039	Hydrochlorothiazide 12.5 MG / quinapril 20 MG Oral Tablet [Quinaretic 12.5/20]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	749833	Hydrochlorothiazide 12.5 MG / telmisartan 40 MG Oral Tablet [Micardis-HCT 40/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	749837	Hydrochlorothiazide 12.5 MG / telmisartan 80 MG Oral Tablet [Micardis-HCT 80/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	809018	Hydrochlorothiazide 12.5 MG / valsartan 160 MG Oral Tablet [Diovan HCT 160/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	809014	Hydrochlorothiazide 12.5 MG / valsartan 80 MG Oral Tablet [Diovan HCT 80/12.5]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823942	Hydrochlorothiazide 25 MG / irbesartan 300 MG Oral Tablet [Avalide 300/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	197887	Hydrochlorothiazide 25 MG / Lisinopril 20 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207965	Hydrochlorothiazide 25 MG / Lisinopril 20 MG Oral Tablet [Prinzide]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823971	Hydrochlorothiazide 25 MG / Lisinopril 20 MG Oral Tablet [Zestoretic 20/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	823963	Hydrochlorothiazide 25 MG / Losartan 100 MG Oral Tablet [Hyzaar 100/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	891626	Hydrochlorothiazide 25 MG / moexipril 15 MG Oral Tablet [Uniretic 15/25]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	847042	Hydrochlorothiazide 25 MG / Olmesartan medoxomil 40 MG Oral Tablet [Benicar HCT 40/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	882559	Hydrochlorothiazide 25 MG / quinapril 20 MG Oral Tablet [Accuretic 20/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	802043	Hydrochlorothiazide 25 MG / quinapril 20 MG Oral Tablet [Quinaretic 25/20]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	749841	Hydrochlorothiazide 25 MG / telmisartan 80 MG Oral Tablet [Micardis-HCT 80/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	809022	Hydrochlorothiazide 25 MG / valsartan 160 MG Oral Tablet [Diovan HCT 160/25]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	153666	irbesartan 150 MG Oral Tablet [Avapro]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	153667	irbesartan 300 MG Oral Tablet [Avapro]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	153665	irbesartan 75 MG Oral Tablet [Avapro]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	314076	Lisinopril 10 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206765	Lisinopril 10 MG Oral Tablet [Prinivil]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	104377	Lisinopril 10 MG Oral Tablet [Zestril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	311353	Lisinopril 2.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206763	Lisinopril 2.5 MG Oral Tablet [Prinivil]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	104375	Lisinopril 2.5 MG Oral Tablet [Zestril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	314077	Lisinopril 20 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206766	Lisinopril 20 MG Oral Tablet [Prinivil]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	104378	Lisinopril 20 MG Oral Tablet [Zestril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	205326	Lisinopril 30 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	213482	Lisinopril 30 MG Oral Tablet [Zestril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	197884	Lisinopril 40 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206770	Lisinopril 40 MG Oral Tablet [Prinivil]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206771	Lisinopril 40 MG Oral Tablet [Zestril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	311354	Lisinopril 5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206764	Lisinopril 5 MG Oral Tablet [Prinivil]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	104376	Lisinopril 5 MG Oral Tablet [Zestril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	261209	Losartan 100 MG Oral Tablet [Cozaar]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206256	Losartan 25 MG Oral Tablet [Cozaar]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	108725	Losartan 50 MG Oral Tablet [Cozaar]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	311734	moexipril 15 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206277	moexipril 15 MG Oral Tablet [Univasc]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	311735	moexipril 7.5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	206313	moexipril 7.5 MG Oral Tablet [Univasc]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	352200	Olmesartan medoxomil 20 MG Oral Tablet [Benicar]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	352201	Olmesartan medoxomil 40 MG Oral Tablet [Benicar]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	352199	Olmesartan medoxomil 5 MG Oral Tablet [Benicar]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	854986	Perindopril Erbumine 2 MG Oral Tablet [Aceon]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	854990	Perindopril Erbumine 4 MG Oral Tablet [Aceon]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	854927	Perindopril Erbumine 8 MG Oral Tablet [Aceon]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	312748	quinapril 10 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207892	quinapril 10 MG Oral Tablet [Accupril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	312749	quinapril 20 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207893	quinapril 20 MG Oral Tablet [Accupril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	314203	quinapril 40 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207895	quinapril 40 MG Oral Tablet [Accupril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	312750	quinapril 5 MG Oral Tablet
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	207891	quinapril 5 MG Oral Tablet [Accupril]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	845489	Ramipril 1.25 MG Oral Capsule [Altace]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	260333	Ramipril 10 MG Oral Capsule [Altace]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	104384	Ramipril 2.5 MG Oral Capsule [Altace]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	104385	Ramipril 5 MG Oral Capsule [Altace]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	284531	telmisartan 20 MG Oral Tablet [Micardis]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	213431	telmisartan 40 MG Oral Tablet [Micardis]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	213432	telmisartan 80 MG Oral Tablet [Micardis]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	847662	trandolapril 1 MG / Verapamil 240 MG Extended Release Tablet [Tarka 1/240]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	210671	trandolapril 1 MG Oral Tablet [Mavik]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	847658	trandolapril 2 MG / Verapamil 180 MG Extended Release Tablet [Tarka 2/180]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	210672	trandolapril 2 MG Oral Tablet [Mavik]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	847672	trandolapril 4 MG / Verapamil 240 MG Extended Release Tablet [Tarka 4/240]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	210673	trandolapril 4 MG Oral Tablet [Mavik]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	153080	valsartan 160 MG Oral Capsule [Diovan]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	351762	valsartan 160 MG Oral Tablet [Diovan]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	352001	valsartan 320 MG Oral Tablet [Diovan]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	352274	valsartan 40 MG Oral Tablet [Diovan]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	153079	valsartan 80 MG Oral Capsule [Diovan]
000008	CAD	8	N	ACE inhibitor or ARB	Medication	RxNorm	351761	valsartan 80 MG Oral Tablet [Diovan]
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I9	395.0	Rheumatic aortic stenosis
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I9	395.2	Rheumatic aortic stenosis with insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I9	396.0	Mitral valve stenosis and aortic valve stenosis
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I9	396.2	Mitral valve stenosis and aortic valve stenosis
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I9	396.8	Multiple involvement of mitral and aortic valves
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I9	424.0	Nonrheumatic mitral (valve) disease
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I 34.8	Other nonrheumatic mitral valve disorders
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I05.0	Rheumatic mitral stenosis
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I05.1	Rheumatic mitral insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I05.2	Rheumatic mitral stenosis with insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I05.8	Other Rheumatic mitral valve diseases
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I05.9	Rheumatic mitral valve disease unspecified
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I06.0	Rheumatic aortic stenosis
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I06.1	Rheumatic aortic insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I06.2	Rheumatic aortic stenosis with insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I06.8	Other rheumatic aortic valve diseases
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I06.9	Rheumatic aortic valve disease, unspecified
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I34.0	Nonrheumatic mitral valve insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I34.1	Nonrheumatic mitral valve prolapse
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I34.2	Nonrheumatic mitral valve stenosis
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I34.2	Nonrheumatic mitral (valve) disease
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I34.8	Nonrheumatic mitral (valve) disease
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I34.9	Nonrheumatic mitral valve disorders, unspecified
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I35.0	Nonrheumatic aortic valve stenosis
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I35.1	Nonrheumatic aortic valve insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I35.2	Nonrheumatic aortic valve stenosis with insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I35.8	Other nonrheumatic aortic valve disorders
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	I35.9	Nonrheumatic aortic valve disorder, unspecified
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	Q23.0	Congenital stenosis of aortic valve
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	Q23.1	Congenital insufficiency of aortic valve
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	Q23.2	Congenital mitral valve stenosis

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	I10	Q23.3	Congenital mitral insufficiency
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	16440002	rheumatic disease of mitral AND aortic valves (disorder)
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	44993000	rheumatic mitral valve AND aortic valve stenosis (disorder)
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	59464004	rheumatic mitral AND aortic valve regurgitation (disorder)
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	71799002	rheumatic mitral valve stenosis AND aortic valve insufficiency (disorder)
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	81552002	rheumatic mitral valve insufficiency AND aortic valve stenosis (disorder)
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	194727002	Non-rheumatic mitral valve stenosis (disorde
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	194732001	diseases of mitral and aortic valves (disorder)
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	194978002	Non-rheumatic mitral regurgitation (disorder)
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	195005009	combined disorders of mitral, aortic and tricuspid valves (disorder)
000276	CAD	8	E	Disease of aortic and mitral valves	Diagnosis/Condition/Problem	SNM	370141003	rheumatic mitral AND aortic valve obstruction (disorder)
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.5	Acute renal failure with lesion of tubular necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.6	Acute renal failure with lesion of renal cortical necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.7	Acute renal failure with lesion of renal medullary [papillary] necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.8	Acute renal failure with other specified pathological lesion in kidney
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.9	Acute renal failure, unspecified
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	586	Renal failure, unspecified
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	788.5	Oliguria and anuria
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N17.1	Acute kidney failure with acute cortical necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N17.2	Acute kidney failure with medullary necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N17.8	Other acute kidney failure
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N17.9	Acute kidney failure unspecified
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N99.0	Acute renal failure, postprocedural
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	42399005	renal failure syndrome (disorder)
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	236433006	acute-on-chronic renal failure (disorder)
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	298015003	acute renal papillary necrosis with renal failure (disorder)
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	307309005	transient acute renal failure (disorder)
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	I70.1	Atherosclerosis of renal artery
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N17.0	Acute renal failure with tubular necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N17.1	Acute renal failure with acute cortical necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N17.2	Acute renal failure with medullary necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N17.8	Other acute renal failure
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	N18.6	End stage renal disease /Chronic kidney disease requiring chronic dialysis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I10	R34	Anuria and oliguria
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.9	Acute kidney failure, unspecified
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.6	Acute renal failure, with lesion of renal cortical necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.5	Acute kidney failure with lesion of tubular necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.8	Acute kidney failure with other specified pathological lesion in kidney
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	I9	584.7	Acute kidney failure with lesion of renal medullary (papillary) necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	14669001	Acute renal failure syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	23697004	Crush syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	31005002	Hepatorenal syndrome due to a procedure
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	36225005	Acute renal failure due to procedure
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	55655006	Prerenal uremia syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	62216007	Familial arthrogryposis-cholestatic hepatorenal syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	78209002	Hemolytic uremic syndrome, adult type
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	111407006	Hemolytic uremic syndrome

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	213231008	Hepatorenal syndrome as a complication of care
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	236428007	Nephrotoxic acute renal failure
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	236429004	Acute drug-induced renal failure
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	236431008	Traumatic anuria - crush syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	236432001	Pulmonary renal syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	269257004	Acute renal failure due to crush syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	301814009	Post-renal renal failure
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	307309005	Transient acute renal failure
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	373421000	Diarrhea-associated hemolytic uremic syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	373422007	Diarrhea-negative hemolytic uremic syndrome
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	422593004	Acute renal failure due to ACE inhibitor
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	423533009	Acute renal failure due to ischemia
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	429224003	Acute renal failure due to acute cortical necrosis
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	429489008	Acute renal failure due to obstruction
000276	CAD	8	E	Renal Failure due to ACE or ARB	Diagnosis/Condition/Problem	SNM	430535006	Acute renal failure with oliguria
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	633.11	Tubal pregnancy with intrauterine pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	633.21	Ovarian pregnancy with intrauterine pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	633.81	Other ectopic pregnancy with intrauterine pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	633.91	Unspecified ectopic pregnancy with intrauterine pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	640.01	Threatened abortion unspecified as to episode of care
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	640.03	Threatened abortion delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.13	Hemorrhage from placenta previa antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.21	Premature separation of placenta with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.23	Premature separation of placenta antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.31	Antepartum hemorrhage associated with coagulation defects with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.33	Antepartum hemorrhage associated with coagulation defects
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.81	Other antepartum hemorrhage with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.83	Other antepartum hemorrhage
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.91	Unspecified antepartum hemorrhage with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	641.93	Unspecified antepartum hemorrhage
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.01	Benign essential hypertension with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.02	Benign essential hypertension with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.03	Antepartum benign essential hypertension
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.11	Hypertension secondary to renal disease with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.12	Hypertension secondary to renal disease with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.13	Hypertension secondary to renal disease antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.21	Other pre-existing hypertension with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.22	Other pre-existing hypertension with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.23	Other pre-existing hypertension antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.31	Transient hypertension of pregnancy with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.32	Transient hypertension of pregnancy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.33	Antepartum transient hypertension
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.62	Eclampsia with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.63	Eclampsia antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.71	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension with delivery

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.72	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.73	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.91	Unspecified hypertension with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.92	Unspecified hypertension with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	642.93	Unspecified antepartum hypertension
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	643.01	Mild hyperemesis gravidarum delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	643.03	Mild hyperemesis gravidarum antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	643.81	Other vomiting complicating pregnancy delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	643.91	Unspecified vomiting of pregnancy delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	643.93	Unspecified vomiting of pregnancy antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	644.03	Threatened premature labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	644.13	Other threatened labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	644.21	Early onset of delivery delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	645.11	Post term pregnancy delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	645.13	Post term pregnancy antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	645.21	Prolonged pregnancy delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	645.23	Prolonged pregnancy antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.01	Papyraceous fetus delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.03	Papyraceous fetus antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.11	Edema or excessive weight gain in pregnancy with delivery with or without antepartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.12	Edema or excessive weight gain in pregnancy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.13	Antepartum edema or excessive weight gain
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.21	Unspecified renal disease in pregnancy with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.22	Unspecified renal disease in pregnancy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.23	Unspecified antepartum renal disease
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.31	Habitual aborter delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.33	Habitual aborter antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.41	Peripheral neuritis in pregnancy with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.42	Peripheral neuritis in pregnancy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.43	Antepartum peripheral neuritis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.51	Asymptomatic bacteriuria in pregnancy with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.52	Asymptomatic bacteriuria in pregnancy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.53	Antepartum asymptomatic bacteriuria
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.61	Infections of genitourinary tract in pregnancy with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.62	Infections of genitourinary tract in pregnancy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.63	Antepartum infections of genitourinary tract
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.71	Liver disorders in pregnancy with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.73	Antepartum liver disorders
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.81	Other specified complications of pregnancy with delivery

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.82	Other specified complications of pregnancy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.83	Other specified antepartum complications
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.91	Unspecified complication of pregnancy with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	646.93	Unspecified antepartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.01	Syphilis of mother complicating pregnancy with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.02	Syphilis of mother complicating pregnancy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.03	Antepartum syphilis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.11	Gonorrhea of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.12	Gonorrhea of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.13	Antepartum gonorrhea
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.21	Other venereal diseases of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.22	Other venereal diseases of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.23	Other antepartum venereal diseases
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.31	Tuberculosis of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.32	Tuberculosis of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.33	Antepartum tuberculosis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.41	Malaria of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.42	Malaria of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.43	Antepartum malaria
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.51	Rubella of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.52	Rubella of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.53	Antepartum rubella
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.61	Other viral diseases of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.62	Other viral diseases of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.63	Other antepartum viral diseases
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.81	Other specified infectious and parasitic diseases of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.82	Other specified infectious and parasitic diseases of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.83	Other specified infectious and parasitic diseases of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.91	Unspecified infection or infestation of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.92	Unspecified infection or infestation of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	647.93	Unspecified infection or infestation of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.01	Diabetes mellitus of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.02	Diabetes mellitus of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.03	Antepartum diabetes mellitus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.11	Thyroid dysfunction of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.12	Thyroid dysfunction of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.13	Antepartum thyroid dysfunction
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.21	Anemia of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.22	Anemia of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.23	Antepartum anemia
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.31	Drug dependence of mother with delivery

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.32	Drug dependence of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.33	Antepartum drug dependence
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.41	Mental disorders of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.42	Mental disorders of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.43	Antepartum mental disorders of mother
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.51	Congenital cardiovascular disorders of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.52	Congenital cardiovascular disorders of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.53	Congenital cardiovascular disorders of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.61	Other cardiovascular diseases of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.62	Other cardiovascular diseases of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.63	Other cardiovascular diseases of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.71	Bone and joint disorders of back pelvis and lower limbs of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.72	Bone and joint disorders of back pelvis and lower limbs of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.73	Bone and joint disorders of back pelvis and lower limbs of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.81	Abnormal glucose tolerance of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.82	Abnormal glucose tolerance of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.83	Abnormal glucose tolerance of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.91	Other current conditions classifiable elsewhere of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.92	Other current conditions classifiable elsewhere of mother with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	648.93	Other current conditions classifiable elsewhere of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.01	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.02	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.03	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.11	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.12	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.13	Obesity complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.21	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.22	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.23	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.31	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.32	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.33	Coagulation defects complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.41	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.42	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.43	Epilepsy complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.51	Spotting complicating pregnancy, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.53	Spotting complicating pregnancy, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.61	Uterine size date discrepancy, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.62	Uterine size date discrepancy, delivered, with mention of postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.63	Uterine size date discrepancy, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.71	Cervical shortening, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	649.73	Cervical shortening, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.01	Twin pregnancy delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.03	Twin pregnancy antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.11	Triplet pregnancy delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.13	Triplet pregnancy antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.21	Quadruplet pregnancy delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.23	Quadruplet pregnancy antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.31	Twin pregnancy with fetal loss and retention of one fetus delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.33	Twin pregnancy with fetal loss and retention of one fetus antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.41	Triplet pregnancy with fetal loss and retention of one or more fetus(es) delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.43	Triplet pregnancy with fetal loss and retention of one or more fetus(es) antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.51	Quadruplet pregnancy with fetal loss and retention of one or more fetus(es) delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.53	Quadruplet pregnancy with fetal loss and retention of one or more fetus(es) antepartum condition or complication

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.61	Other multiple pregnancy with fetal loss and retention of one or more fetus(es) delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.63	Other multiple pregnancy with fetal loss and retention of one or more fetus(es) antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.71	Multiple gestation following (elective) fetal reduction, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.73	Multiple gestation following (elective) fetal reduction, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.81	Other specified multiple gestation delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.83	Other specified multiple gestation antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.91	Unspecified multiple gestation delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	651.93	Unspecified multiple gestation antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.01	Unstable lie delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.03	Unstable lie antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.11	Breech or other malpresentation successfully converted to cephalic presentation delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.13	Breech or other malpresentation successfully converted to cephalic presentation antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.21	Breech presentation without version delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.23	Breech presentation without version antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.31	Transverse or oblique presentation delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.33	Transverse or oblique presentation antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.41	Face or brow presentation delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.43	Face or brow presentation antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.51	High head at term delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.53	High head at term antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.61	Multiple gestation with malpresentation of one fetus or more delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.63	Multiple gestation with malpresentation of one fetus or more antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.71	Prolapsed arm of fetus delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.73	Prolapsed arm antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.81	Other specified malposition or malpresentation delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.83	Other specified malposition or malpresentation antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.91	Unspecified malposition or malpresentation delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	652.93	Unspecified malposition or malpresentation antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.01	Major abnormality of bony pelvis not further specified delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.03	Major abnormality of bony pelvis not further specified antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.11	Generally contracted pelvis delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.13	Generally contracted pelvis antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.21	Inlet contraction of pelvis delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.23	Inlet contraction of pelvis antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.31	Outlet contraction of pelvis delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.33	Outlet contraction of pelvis antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.41	Fetopelvic disproportion delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.43	Fetopelvic disproportion antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.51	Unusually large fetus causing disproportion delivered

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000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.53	Unusually large fetus causing disproportion antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.61	Hydrocephalic fetus causing disproportion delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.63	Hydrocephalic fetus causing disproportion antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.71	Other fetal abnormality causing disproportion delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.73	Other fetal abnormality causing disproportion antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.81	Disproportion of other origin delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.83	Disproportion of other origin antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.91	Unspecified disproportion delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	653.93	Unspecified disproportion antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.01	Congenital abnormalities of uterus with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.02	Congenital abnormalities of uterus delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.03	Congenital abnormalities of uterus antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.11	Tumors of body of uterus with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.12	Tumors of body of uterus delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.13	Tumors of body of uterus antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.21	Previous cesarean delivery with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.23	Previous cesarean delivery antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.31	Retroverted and incarcerated gravid uterus delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.32	Retroverted and incarcerated gravid uterus delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.33	Retroverted and incarcerated gravid uterus antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.41	Other abnormalities in shape or position of gravid uterus and of neighboring structures delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.42	Other abnormalities in shape or position of gravid uterus and of neighboring structures delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.43	Other abnormalities in shape or position of gravid uterus and of neighboring structures antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.51	Cervical incompetence with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.52	Cervical incompetence delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.53	Cervical incompetence antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.61	Other congenital or acquired abnormality of cervix with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.62	Other congenital or acquired abnormality of cervix delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.63	Other congenital or acquired abnormality of cervix antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.71	Congenital or acquired abnormality of vagina with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.72	Congenital or acquired abnormality of vagina delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.73	Congenital or acquired abnormality of vagina antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.81	Congenital or acquired abnormality of vulva with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.82	Congenital or acquired abnormality of vulva delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.83	Congenital or acquired abnormality of vulva antepartum condition or complication

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.91	Other and unspecified abnormality of organs and soft tissues of pelvis with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.92	Other and unspecified abnormality of organs and soft tissues of pelvis delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	654.93	Other and unspecified abnormality of organs and soft tissues of pelvis antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.01	Central nervous system malformation in fetus with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.03	Central nervous system malformation in fetus antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.11	Chromosomal abnormality in fetus affecting management of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.13	Chromosomal abnormality in fetus affecting management of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.21	Hereditary disease in family possibly affecting fetus affecting management of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.23	Hereditary disease in family possibly affecting fetus affecting management of mother antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.31	Suspected damage to fetus from viral disease in the mother affecting management of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.33	Suspected damage to fetus from viral disease in the mother affecting management of mother antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.41	Suspected damage to fetus from other disease in the mother affecting management of mother with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.43	Suspected damage to fetus from other disease in the mother affecting management of mother antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.51	Suspected damage to fetus from drugs affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.53	Suspected damage to fetus from drugs affecting management of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.61	Suspected damage to fetus from radiation affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.63	Suspected damage to fetus from radiation affecting management of mother antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.71	Decreased fetal movements affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.73	Decreased fetal movements affecting management of mother antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.81	Other known or suspected fetal abnormality not elsewhere classified affecting management of mother with delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.83	Other known or suspected fetal abnormality not elsewhere classified affecting management of mother antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.91	Unspecified suspected fetal abnormality affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	655.93	Unspecified suspected fetal abnormality affecting management of mother antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.01	Fetal-maternal hemorrhage with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.03	Fetal-maternal hemorrhage antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.11	Rhesus isoimmunization affecting management of mother delivered

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.13	Rhesus isoimmunization affecting management of mother antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.21	Isoimmunization from other and unspecified blood-group incompatibility affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.23	Isoimmunization from other and unspecified blood-group incompatibility affecting management of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.31	Fetal distress affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.33	Fetal distress affecting management of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.41	Intrauterine death affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.43	Intrauterine death affecting management of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.51	Poor fetal growth affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.53	Poor fetal growth affecting management of mother antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.61	Excessive fetal growth affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.73	Other placental conditions affecting management of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.81	Other specified fetal and placental problems affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.83	Other specified fetal and placental problems affecting management of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.91	Unspecified fetal and placental problem affecting management of mother delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	656.93	Unspecified fetal and placental problem affecting management of mother antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	657.01	Polyhydramnios with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	657.03	Polyhydramnios antepartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.01	Oligohydramnios delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.03	Oligohydramnios antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.11	Premature rupture of membranes delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.13	Premature rupture of membranes antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.21	Delayed delivery after spontaneous or unspecified rupture of membranes delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.23	Delayed delivery after spontaneous or unspecified rupture of membranes antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.31	Delayed delivery after artificial rupture of membranes delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.33	Delayed delivery after artificial rupture of membranes antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.41	Infection of amniotic cavity delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.43	Infection of amniotic cavity antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.81	Other problems associated with amniotic cavity and membranes delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.83	Other problems associated with amniotic cavity and membranes antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.91	Unspecified problem associated with amniotic cavity and membranes delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	658.93	Unspecified problem associated with amniotic cavity and membranes antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.01	Failed mechanical induction of labor delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.03	Failed mechanical induction of labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.11	Failed medical or unspecified induction of labor delivered

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000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.13	Failed medical or unspecified induction of labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.21	Unspecified type maternal pyrexia during labor delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.23	Unspecified type maternal pyrexia antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.31	Generalized infection during labor delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.33	Generalized infection during labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.41	Grand multiparity with current pregnancy delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.43	Grand multiparity with current pregnancy antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.51	Elderly primigravida delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.53	Elderly primigravida antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.61	Other advanced maternal age delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.63	Other advanced maternal age antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.71	Abnormality in fetal heart rate or rhythm delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.73	Abnormality in fetal heart rate or rhythm antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.81	Other specified indications for care or intervention related to labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.83	Other specified indications for care or intervention related to labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.91	Unspecified indication for care or intervention related to labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	659.93	Unspecified indication for care or intervention related to labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.01	Obstruction caused by malposition of fetus at onset of labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.03	Obstruction caused by malposition of fetus at onset of labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.11	Obstruction by bony pelvis during labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.13	Obstruction by bony pelvis during labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.21	Obstruction by abnormal pelvic soft tissues during labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.23	Obstruction by abnormal pelvic soft tissues during labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.31	Deep transverse arrest and persistent occipitoposterior position with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.33	Deep transverse arrest and persistent occipitoposterior position antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.41	Shoulder (girdle) dystocia with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.43	Shoulder (girdle) dystocia antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.51	Locked twins with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.53	Locked twins antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.61	Unspecified failed trial of labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.63	Unspecified failed trial of labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.71	Unspecified failed forceps or vacuum extractor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.73	Unspecified failed forceps or vacuum extractor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.81	Other causes of obstructed labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.83	Other causes of obstructed labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.91	Unspecified obstructed labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	660.93	Unspecified obstructed labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.01	Primary uterine inertia with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.03	Primary uterine inertia antepartum

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.11	Secondary uterine inertia with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.13	Secondary uterine inertia antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.21	Other and unspecified uterine inertia with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.23	Other and unspecified uterine inertia antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.31	Precipitate labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.33	Precipitate labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.41	Hypertonic incoordinate or prolonged uterine contractions with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.43	Hypertonic incoordinate or prolonged uterine contractions antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.91	Unspecified abnormality of labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	661.93	Unspecified abnormality of labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	662.01	Prolonged first stage of labor delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	662.03	Prolonged first stage of labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	662.11	Unspecified type prolonged labor delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	662.13	Unspecified type prolonged labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	662.21	Prolonged second stage of labor delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	662.23	Prolonged second stage of labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	662.31	Delayed delivery of second twin triplet etc. delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	662.33	Delayed delivery of second twin triplet etc. antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.01	Prolapse of cord complicating labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.03	Prolapse of cord complicating labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.11	Cord around neck with compression complicating labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.13	Cord around neck with compression complicating labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.21	Other and unspecified cord entanglement with compression complicating labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.23	Other and unspecified cord entanglement with compression complicating labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.31	Other and unspecified cord entanglement without compression complicating labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.33	Other and unspecified cord entanglement without compression complicating labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.41	Short cord complicating labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.43	Short cord complicating labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.51	Vasa previa complicating labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.61	Vascular lesions of cord complicating labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.63	Vascular lesions of cord complicating labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.81	Other umbilical cord complications during labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.83	Other umbilical cord complications during labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.91	Unspecified umbilical cord complication during labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	663.93	Unspecified umbilical cord complication during labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	664.01	First-degree perineal laceration with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	664.11	Second-degree perineal laceration with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	664.21	Third-degree perineal laceration with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	664.31	Fourth-degree perineal laceration with delivery

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	664.51	Vulvar and perineal hematoma with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	664.61	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	664.81	Other specified trauma to perineum and vulva with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	664.91	Unspecified trauma to perineum and vulva with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.01	Rupture of uterus before onset of labor with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.03	Rupture of uterus before onset of labor antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.11	Rupture of uterus with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.31	Laceration of cervix with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.41	High vaginal laceration with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.51	Other injury to pelvic organs with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.61	Damage to pelvic joints and ligaments with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.71	Pelvic hematoma with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.72	Pelvic hematoma delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.81	Other specified obstetrical trauma with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.83	Other specified obstetrical trauma antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.91	Unspecified obstetrical trauma with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.92	Unspecified obstetrical trauma delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	665.93	Unspecified obstetrical trauma antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	666.02	Third-stage postpartum hemorrhage with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	666.12	Other immediate postpartum hemorrhage with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	666.22	Delayed and secondary postpartum hemorrhage with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	666.32	Postpartum coagulation defects with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	667.02	Retained placenta without hemorrhage with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	667.12	Retained portions of placenta or membranes without hemorrhage delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.01	Pulmonary complications of anesthesia or other sedation in labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.02	Pulmonary complications of anesthesia or other sedation in labor and delivery delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.03	Pulmonary complications of anesthesia or other sedation in labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.11	Cardiac complications of anesthesia or other sedation in labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.12	Cardiac complications of anesthesia or other sedation in labor and delivery delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.13	Cardiac complications of anesthesia or other sedation in labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.21	Central nervous system complications of anesthesia or other sedation in labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.22	Central nervous system complications of anesthesia or other sedation in labor and delivery delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.23	Central nervous system complications of anesthesia or other sedation in labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.81	Other complications of anesthesia or other sedation in labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.82	Other complications of anesthesia or other sedation in labor and delivery delivered with postpartum complication

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.83	Other complications of anesthesia or other sedation in labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.91	Unspecified complication of anesthesia or other sedation in labor and delivery delivered
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.92	Unspecified complication of anesthesia or other sedation in labor and delivery delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	668.93	Unspecified complication of anesthesia or other sedation in labor and delivery antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.01	Maternal distress with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.02	Maternal distress with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.03	Maternal distress complicating labor and delivery antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.11	Obstetric shock with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.12	Obstetric shock with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.13	Antepartum obstetric shock
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.51	Forceps or vacuum extractor delivery without indication delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.61	Breech extraction without indication delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.71	Cesarean delivery without indication delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.81	Other complications of labor and delivery delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.82	Other complications of labor and delivery delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.83	Other complications of labor and delivery antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.91	Unspecified complication of labor and delivery with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.92	Unspecified complication of labor and delivery with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	669.93	Unspecified complication of labor and delivery antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	670.02	Major puerperal infection delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.01	Varicose veins of legs with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.02	Varicose veins of legs with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.03	Antepartum varicose veins of legs
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.11	Varicose veins of vulva and perineum with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.12	Varicose veins of vulva and perineum with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.13	Antepartum varicose veins of vulva and perineum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.21	Superficial thrombophlebitis with delivery with or without antepartum condition

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.22	Superficial thrombophlebitis with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.23	Antepartum superficial thrombophlebitis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.31	Deep phlebothrombosis antepartum with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.33	Deep phlebothrombosis antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.42	Deep phlebothrombosis postpartum with delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.51	Other phlebitis and thrombosis with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.52	Other phlebitis and thrombosis with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.53	Other antepartum phlebitis and thrombosis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.81	Other venous complications with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.82	Other venous complications with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.83	Other antepartum venous complications
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.91	Unspecified venous complication with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.92	Unspecified venous complication with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	671.93	Unspecified antepartum venous complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	672.02	Puerperal pyrexia of unknown origin delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.01	Obstetrical air embolism with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.02	Obstetrical air embolism with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.03	Obstetrical air embolism antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.11	Amniotic fluid embolism with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.12	Amniotic fluid embolism with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.13	Amniotic fluid embolism antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.21	Obstetrical blood-clot embolism with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.22	Obstetrical blood-clot embolism with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.23	Obstetrical blood-clot embolism antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.31	Obstetrical pyemic and septic embolism with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.32	Obstetrical pyemic and septic embolism with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.33	Obstetrical pyemic and septic embolism antepartum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.81	Other obstetrical pulmonary embolism with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	673.82	Other obstetrical pulmonary embolism with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.01	Cerebrovascular disorders with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.02	Cerebrovascular disorders with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.03	Antepartum cerebrovascular disorders
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.12	Disruption of cesarean wound with delivery with postpartum complication

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.22	Disruption of perineal wound with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.32	Other complications of obstetrical surgical wounds with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.42	Placental polyp with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.51	Peripartum cardiomyopathy with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.52	Peripartum cardiomyopathy with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.53	Peripartum cardiomyopathy with antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.82	Other complications of puerperium with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	674.92	Unspecified complications of puerperium with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.01	Infections of nipple associated with childbirth delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.02	Infections of nipple associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.03	Antepartum infections of nipple
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.11	Abscess of breast associated with childbirth delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.12	Abscess of breast associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.13	Antepartum abscess of breast
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.21	Nonpurulent mastitis associated with childbirth delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.22	Nonpurulent mastitis associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.23	Antepartum nonpurulent mastitis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.81	Other specified infections of the breast and nipple associated with childbirth delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.82	Other specified infections of the breast and nipple associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.83	Other specified antepartum infections of the breast and nipple
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.91	Unspecified infection of the breast and nipple associated with childbirth delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.92	Unspecified infection of the breast and nipple associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	675.93	Unspecified antepartum infection of the breast and nipple
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.01	Retracted nipple associated with childbirth delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.02	Retracted nipple associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.03	Retracted nipple associated with childbirth antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.11	Cracked nipple associated with childbirth delivered with or without antepartum condition

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.12	Cracked nipple associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.13	Cracked nipple associated with childbirth antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.21	Engorgement of breasts associated with childbirth delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.22	Engorgement of breasts associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.23	Antepartum engorgement of breasts associated with childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.31	Other and unspecified disorder of breast associated with childbirth delivered with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.32	Other and unspecified disorder of breast associated with childbirth delivered with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.41	Failure of lactation with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.42	Failure of lactation with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.43	Failure of lactation antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.51	Suppressed lactation unspecified as to episode of care
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.52	Suppressed lactation with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.53	Suppressed lactation antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.61	Galactorrhea with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.62	Galactorrhea with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.63	Galactorrhea antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.81	Other disorders of lactation with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.82	Other disorders of lactation with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.83	Other disorders of lactation antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.91	Unspecified disorder of lactation with delivery with or without antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.92	Unspecified disorder of lactation with delivery with postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	676.93	Unspecified disorder of lactation antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	678.01	Fetal hematologic conditions, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	678.03	Fetal hematologic conditions, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	678.11	Fetal conjoined twins, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	678.13	Fetal conjoined twins, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	679.01	Maternal complications from in utero procedure, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	679.02	Maternal complications from in utero procedure, delivered, with mention of postpartum complication

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	679.03	Maternal complications from in utero procedure, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	679.11	Fetal complications from in utero procedures, delivered, with or without mention of antepartum condition
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	679.12	Fetal complications from in utero procedures, delivered, with mention of postpartum complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	679.13	Fetal complications from in utero procedures, antepartum condition or complication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V22.2	PREG STATE, INCIDENTAL
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.0	PREG W HX OF INFERTILITY
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.1	PREG W HX-TROPHOBLASTIC DIS
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.2	PREG W HX OF ABORTION
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.3	GRAND MULTIPARITY
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.4	Pregnancy with other poor obstetric history
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.41	PREG W HX PRE-TERM LABOR
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.49	PREG W POOR OBS HX NEC
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.5	PREG W POOR REPRODUCT HX
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.7	INSUFFICENT PRENATAL CARE
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I9	V23.8	Other high-risk pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.4	Supervision of pregnancy with grand multiparity
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.40	Supervision of pregnancy with grand multiparity, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.41	Supervision of pregnancy with grand multiparity, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.42	Supervision of pregnancy with grand multiparity, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.43	Supervision of pregnancy with grand multiparity, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.5	Supervision of elderly primigravida and multigravida
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.51	Supervision of elderly multigravida, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.511	Supervision of elderly primigravida, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.512	Supervision of elderly primigravida, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.513	Supervision of elderly primigravida, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.519	Supervision of elderly primigravida, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.52	Supervision of elderly multigravida
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.521	Supervision of elderly multigravida, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.522	Supervision of elderly multigravida, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.523	Supervision of elderly multigravida, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O09.529	Supervision of elderly primigravida
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.1	Pre-existing hypertensive heart disease complicating pregnancy, childbirth and the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.11	Pre-existing hypertensive heart disease complicating pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.111	Pre-existing hypertensive heart disease complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.112	Pre-existing hypertensive heart disease complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.113	Pre-existing hypertensive heart disease complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.119	Pre-existing hypertensive heart disease complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.12	Pre-existing hypertensive heart disease complicating childbirth

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.13	Pre-existing hypertensive heart disease complicating the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.211	Pre-existing hypertensive chronic kidney disease complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.212	Pre-existing hypertensive chronic kidney disease complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.213	Pre-existing hypertensive chronic kidney disease complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.219	Pre-existing hypertensive chronic kidney disease complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.22	Pre-existing hypertensive chronic kidney disease complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.411	Pre-existing secondary hypertension complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.412	Pre-existing secondary hypertension complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.413	Pre-existing secondary hypertension complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.419	Pre-existing secondary hypertension complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.42	Pre-existing secondary hypertension complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.911	Unspecified pre-existing hypertension complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.912	Unspecified pre-existing hypertension complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.913	Unspecified pre-existing hypertension complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.919	Unspecified pre-existing hypertension complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O10.92	Unspecified pre-existing hypertension complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O15.00	Eclampsia in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O15.02	Eclampsia in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O15.03	Eclampsia in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O15.9	Eclampsia, unspecified as to time period
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O16.1	Unspecified maternal hypertension, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O16.2	Unspecified maternal hypertension, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O16.3	Unspecified maternal hypertension, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O16.9	Unspecified maternal hypertension, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O20.0	Threatened abortion
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O20.8	Other hemorrhage in early pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O20.9	Hemorrhage in early pregnancy, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O21.0	Mild hyperemesis gravidarum
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O21.2	Late vomiting of pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O21.8	Other vomiting complicating pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O21.9	Vomiting of pregnancy, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.0	Varicose veins of lower extremity in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.00	Varicose veins of lower extremity in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.01	Varicose veins of lower extremity in pregnancy, first trimester

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.02	Varicose veins of lower extremity in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.03	Varicose veins of lower extremity in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.1	Genital varices in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.10	Genital varices in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.11	Genital varices in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.12	Genital varices in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.13	Genital varices in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.2	Superficial thrombophlebitis in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.20	Superficial thrombophlebitis in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.21	Superficial thrombophlebitis in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.22	Superficial thrombophlebitis in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.23	Superficial thrombophlebitis in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.3	Deep phlebothrombosis in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.30	Deep phlebothrombosis in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.31	Deep phlebothrombosis in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.32	Deep phlebothrombosis in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.33	Deep phlebothrombosis in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.5	Cerebral venous thrombosis in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.50	Cerebral venous thrombosis in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.51	Cerebral venous thrombosis in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.52	Cerebral venous thrombosis in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.53	Cerebral venous thrombosis in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.8	Other venous complications in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.8x	Other venous complications in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.8x1	Other venous complications in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.8x2	Other venous complications in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.8x3	Other venous complications in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O22.8x9	Other venous complications in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O23.40	Unspecified infection of urinary tract in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O23.41	Unspecified infection of urinary tract in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O23.42	Unspecified infection of urinary tract in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O23.43	Unspecified infection of urinary tract in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O23.90	Unspecified genitourinary tract infection in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O23.91	Unspecified genitourinary tract infection in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O23.92	Unspecified genitourinary tract infection in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O23.93	Unspecified genitourinary tract infection in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O24.911	Unspecified diabetes mellitus in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O24.912	Unspecified diabetes mellitus in pregnancy, second trimester

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O24.913	Unspecified diabetes mellitus in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O24.919	Unspecified diabetes mellitus in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O24.92	Unspecified diabetes mellitus in childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.00	Excessive weight gain in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.01	Excessive weight gain in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.02	Excessive weight gain in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.03	Excessive weight gain in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.20	Pregnancy care of habitual aborter, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.21	Pregnancy care of habitual aborter, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.22	Pregnancy care of habitual aborter, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.23	Pregnancy care of habitual aborter, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.611	Liver disorders in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.612	Liver disorders in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.613	Liver disorders in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.619	Liver disorders in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.811	Pregnancy related exhaustion and fatigue, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.812	Pregnancy related exhaustion and fatigue, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.813	Pregnancy related exhaustion and fatigue, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.819	Pregnancy related exhaustion and fatigue, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.821	Pregnancy related peripheral neuritis, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.821	Pregnancy related peripheral neuritis, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.822	Pregnancy related peripheral neuritis, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.823	Pregnancy related peripheral neuritis, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.829	Pregnancy related peripheral neuritis, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.831	Pregnancy related renal disease, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.832	Pregnancy related renal disease, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.833	Pregnancy related renal disease, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.839	Pregnancy related renal disease, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.84	Uterine size-date discrepancy complicating pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.841	Uterine size-date discrepancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.842	Uterine size-date discrepancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.843	Uterine size-date discrepancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.849	Uterine size-date discrepancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.85	Spotting complicating pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.851	Spotting complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.852	Spotting complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.853	Spotting complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.859	Spotting complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.87	Cervical shortening
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.872	Cervical shortening, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.873	Cervical shortening, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.879	Cervical shortening, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.891	Other specified pregnancy related conditions, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.892	Other specified pregnancy related conditions, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.893	Other specified pregnancy related conditions, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.899	Other specified pregnancy related conditions, unspecified trimester

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000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.90	Pregnancy related conditions, unspecified, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.91	Pregnancy related conditions, unspecified, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.92	Pregnancy related conditions, unspecified, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O26.93	Pregnancy related conditions, unspecified, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.0	Twin pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.001	Twin pregnancy, unspecified, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.002	Twin pregnancy, unspecified, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.003	Twin pregnancy, unspecified, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.009	Twin pregnancy, unspecified, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.02	Conjoined twins
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.021	Conjoined twins, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.022	Conjoined twins, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.023	Conjoined twins, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.029	Conjoined twins, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.1	Triplet pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.10	Triplet pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.11	Triplet pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.12	Triplet pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.13	Triplet pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.2	Quadruplet pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.20	Quadruplet pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.21	Quadruplet pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.22	Quadruplet pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O30.23	Quadruplet pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.000	Papyraceous fetus, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.001	Papyraceous fetus, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.002	Papyraceous fetus, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.003	Papyraceous fetus, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.004	Papyraceous fetus, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.005	Papyraceous fetus, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.009	Papyraceous fetus, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.010	Papyraceous fetus, first trimester, not applicable or unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.011	Papyraceous fetus, first trimester, fetus 1
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.012	Papyraceous fetus, first trimester, fetus 2
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.013	Papyraceous fetus, first trimester, fetus 3
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.014	Papyraceous fetus, first trimester, fetus 4
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.015	Papyraceous fetus, first trimester, fetus 5
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.019	Papyraceous fetus, first trimester, other fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.020	Papyraceous fetus, second trimester,first trimester, not applicable or unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.021	Papyraceous fetus, second trimester,fetus 1
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.022	Papyraceous fetus, second trimester, fetus 2
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.023	Papyraceous fetus, second trimester, fetus 3
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.024	Papyraceous fetus, second trimester, fetus 4
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.025	Papyraceous fetus, second trimester, fetus 5
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.029	Papyraceous fetus, second trimester, other fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.030	Papyraceous fetus, third trimester,first trimester, not applicable or unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.031	Papyraceous fetus, third trimester,fetus 1
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.032	Papyraceous fetus, third trimester, fetus 2

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.033	Papyraceous fetus, third trimester, fetus 3
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.034	Papyraceous fetus, third trimester, fetus 4
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.035	Papyraceous fetus, third trimester,fetus 5
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.039	Papyraceous fetus, third trimester, other fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.2	Continuing pregnancy after intrauterine death of one fetus or more
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.20	Continuing pregnancy after intrauterine death of one fetus or more, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.21	Continuing pregnancy after intrauterine death of one fetus or more, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.22	Continuing pregnancy after intrauterine death of one fetus or more, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.23	Continuing pregnancy after intrauterine death of one fetus or more, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.3	Continuing pregnancy after elective fetal reduction of one fetus or more
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.30	Continuing pregnancy after elective fetal reduction of one fetus or more, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.31	Continuing pregnancy after elective fetal reduction of one fetus or more, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.32	Continuing pregnancy after elective fetal reduction of one fetus or more, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.33	Continuing pregnancy after elective fetal reduction of one fetus or more, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.8	Other complications specific to multiple gestation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.8	Other complications specific to multiple gestation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.8x	Other complications specific to multiple gestation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.8x	Other complications specific to multiple gestation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.8x1	Other complications specific to multiple gestation, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.8x2	Other complications specific to multiple gestation, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.8x3	Other complications specific to multiple gestation, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O31.8x9	Other complications specific to multiple gestation, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.8	Maternal care for other specified fetal problems
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.81	Decreased fetal movements
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.812	Decreased fetal movements, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.813	Decreased fetal movements, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.819	Decreased fetal movements, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.82	Fetal anemia and thrombocytopenia
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.821	Fetal anemia and thrombocytopenia, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.822	Fetal anemia and thrombocytopenia, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.823	Fetal anemia and thrombocytopenia, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.829	Fetal anemia and thrombocytopenia, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.89	Maternal care for other specified fetal problems
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.891	Maternal care for other specified fetal problems, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.892	Maternal care for other specified fetal problems, second trimester

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000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.893	Maternal care for other specified fetal problems, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.899	Maternal care for other specified fetal problems, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.9	Maternal care for fetal problem, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.90	Maternal care for fetal problem, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.91	Maternal care for fetal problem, unspecified, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.92	Maternal care for fetal problem, unspecified, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O36.93	Maternal care for fetal problem, unspecified, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O40	Polyhydramnios
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O40.1	Polyhydramnios, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O40.2	Polyhydramnios, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O40.3	Polyhydramnios, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O40.9	Polyhydramnios, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.0	Oligohydramnios
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.00	Oligohydramnios, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.01	Oligohydramnios, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.02	Oligohydramnios, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.03	Oligohydramnios, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.1	Infection of amniotic sac and membranes
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.10	Infection of amniotic sac and membranes, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.101	Infection of amniotic sac and membranes, unspecified, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.102	Infection of amniotic sac and membranes, unspecified, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.103	Infection of amniotic sac and membranes, unspecified, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.109	Infection of amniotic sac and membranes, unspecified, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.12	Chorioamnionitis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.121	Chorioamnionitis, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.122	Chorioamnionitis, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.123	Chorioamnionitis, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.129	Chorioamnionitis, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.14	Placentitis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.141	Placentitis, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.142	Placentitis, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.143	Placentitis, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.149	Placentitis, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.8	Other specified disorders of amniotic fluid and membranes
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.8x	Other specified disorders of amniotic fluid and membranes
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.8x1	Other specified disorders of amniotic fluid and membranes, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.8x2	Other specified disorders of amniotic fluid and membranes, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.8x3	Other specified disorders of amniotic fluid and membranes, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.8x9	Other specified disorders of amniotic fluid and membranes, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.9	Disorder of amniotic fluid and membranes, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.90	Disorder of amniotic fluid and membranes, unspecified, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.91	Disorder of amniotic fluid and membranes, unspecified, first trimester

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.92	Disorder of amniotic fluid and membranes, unspecified, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O41.93	Disorder of amniotic fluid and membranes, unspecified, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O42	Premature rupture of membranes
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O42.0	Premature rupture of membranes, onset of labor within 24 hours of rupture
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O42.00	Premature rupture of membranes, onset of labor within 24 hours of rupture, unspecified weeks of gestation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O42.01	Preterm premature rupture of membranes, onset of labor within 24 hours of rupture
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O42.011	Preterm premature rupture of membranes, onset of labor within 24 hours of rupture, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O42.012	Preterm premature rupture of membranes, onset of labor within 24 hours of rupture, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O42.013	Preterm premature rupture of membranes, onset of labor within 24 hours of rupture, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O42.019	Preterm premature rupture of membranes, onset of labor within 24 hours of rupture, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O44.00	Placenta previa specified as without hemorrhage, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O44.01	Placenta previa specified as without hemorrhage, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O44.02	Placenta previa specified as without hemorrhage, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O44.03	Placenta previa specified as without hemorrhage, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O44.10	Placenta previa with hemorrhage, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O44.11	Placenta previa with hemorrhage, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O44.12	Placenta previa with hemorrhage, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O44.13	Placenta previa with hemorrhage, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O45	Premature separation of placenta [abruptio placentae]
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O46	Antepartum hemorrhage, not elsewhere classified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O46.0	Antepartum hemorrhage with coagulation defect
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O46.8	Other antepartum hemorrhage
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O46.9	Antepartum hemorrhage, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O48.0	Post-term pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O48.1	Prolonged pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.00	Preterm labor without delivery, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.02	Preterm labor without delivery, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.03	Preterm labor without delivery, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.100	Preterm labor with preterm delivery, unspecified trimester, not applicable or unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.101	Preterm labor with preterm delivery, unspecified trimester, fetus 1
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.102	Preterm labor with preterm delivery, unspecified trimester, fetus 2
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.103	Preterm labor with preterm delivery, unspecified trimester, fetus 3
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.104	Preterm labor with preterm delivery, unspecified trimester, fetus 4

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.105	Preterm labor with preterm delivery, unspecified trimester, fetus 5
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.109	Preterm labor with preterm delivery, unspecified trimester, other fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.120	Preterm labor second trimester with preterm delivery second trimester, not applicable or unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.121	Preterm labor second trimester with preterm delivery second trimester, fetus 1
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.122	Preterm labor second trimester with preterm delivery second trimester, fetus 2
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.123	Preterm labor second trimester with preterm delivery second trimester, fetus 3
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.124	Preterm labor second trimester with preterm delivery second trimester, fetus 4
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.125	Preterm labor second trimester with preterm delivery second trimester, fetus 5
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.129	Preterm labor second trimester with preterm delivery second trimester, other fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.130	Preterm labor second trimester with preterm delivery third trimester, not applicable or unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.131	Preterm labor second trimester with preterm delivery third trimester, fetus 1
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.132	Preterm labor second trimester with preterm delivery third trimester, fetus 2
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.133	Preterm labor second trimester with preterm delivery third trimester, fetus 3
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.134	Preterm labor second trimester with preterm delivery third trimester, fetus 4
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.135	Preterm labor second trimester with preterm delivery third trimester, fetus 5
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.139	Preterm labor second trimester with preterm delivery third trimester, other fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.140	Preterm labor third trimester with preterm delivery third trimester, not applicable or unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.141	Preterm labor third trimester with preterm delivery third trimester, fetus 1
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.142	Preterm labor third trimester with preterm delivery third trimester, fetus 2
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.143	Preterm labor third trimester with preterm delivery third trimester, fetus 3
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.144	Preterm labor third trimester with preterm delivery third trimester, fetus 4
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.145	Preterm labor third trimester with preterm delivery third trimester, fetus 5
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O60.149	Preterm labor third trimester with preterm delivery third trimester, other fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O61.0	Failed medical induction of labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O61.1	Failed instrumental induction of labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O61.8	Other failed induction of labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O61.9	Failed induction of labor, unspecified

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O62	Abnormalities of forces of labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O62.0	Primary inadequate contractions
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O62.1	Secondary uterine inertia
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O62.2	Other uterine inertia
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O62.3	Precipitate labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O62.4	Hypertonic, incoordinate, and prolonged uterine contractions
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O62.8	Other abnormalities of forces of labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O62.9	Abnormality of forces of labor, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O63	Long labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O63.0	Prolonged first stage (of labor)
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O63.1	Prolonged second stage (of labor)
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O63.2	Delayed delivery of second twin, triplet, etc.
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O63.9	Long labor, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64	Obstructed labor due to malposition and malpresentation of fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64.0	Obstructed labor due to incomplete rotation of fetal head
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64.1	Obstructed labor due to breech presentation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64.2	Obstructed labor due to face presentation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64.3	Obstructed labor due to brow presentation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64.4	Obstructed labor due to shoulder presentation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64.5	Obstructed labor due to compound presentation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64.8	Obstructed labor due to other malposition and malpresentation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O64.9	Obstructed labor due to malposition and malpresentation, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65	Obstructed labor due to maternal pelvic abnormality
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65.0	Obstructed labor due to deformed pelvis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65.1	Obstructed labor due to generally contracted pelvis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65.2	Obstructed labor due to pelvic inlet contraction
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65.3	Obstructed labor due to pelvic outlet and mid-cavity contraction
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65.4	Obstructed labor due to fetopelvic disproportion, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65.5	Obstructed labor due to abnormality of maternal pelvic organs
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65.8	Obstructed labor due to other maternal pelvic abnormalities
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O65.9	Obstructed labor due to maternal pelvic abnormality, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66	Other obstructed labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.0	Obstructed labor due to shoulder dystocia
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.1	Obstructed labor due to locked twins
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.2	Obstructed labor due to unusually large fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.3	Obstructed labor due to other abnormalities of fetus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.4	Failed trial of labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.40	Failed trial of labor, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.41	Failed attempted vaginal birth after previous cesarean delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.5	Attempted application of vacuum extractor and forceps
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.6	Obstructed labor due to other multiple fetuses
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.8	Other specified obstructed labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O66.9	Obstructed labor, unspecified

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O67	Labor and delivery complicated by intrapartum hemorrhage, not elsewhere classified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O67.0	Intrapartum hemorrhage with coagulation defect
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O67.8	Other intrapartum hemorrhage
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O67.9	Intrapartum hemorrhage, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69	Labor and delivery complicated by umbilical cord complications
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.0	Labor and delivery complicated by prolapse of cord
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.1	Labor and delivery complicated by cord around neck, without compression
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.2	Labor and delivery complicated by other cord entanglement, with compression
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.3	Labor and delivery complicated by short cord
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.4	Labor and delivery complicated by vasa previa
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.5	Labor and delivery complicated by vascular lesion of cord
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.8	Labor and delivery complicated by other cord complications
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.81	Labor and delivery complicated by cord around neck, without compression
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.82	Labor and delivery complicated by other cord entanglement, without compression
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.89	Labor and delivery complicated by other cord complications
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O69.9	Labor and delivery complicated by cord complication, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O70	Perineal laceration during delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O70.0	First degree perineal laceration during delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O70.1	First degree perineal laceration during delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O70.2	Third degree perineal laceration during delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O70.3	Fourth degree perineal laceration during delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O70.4	Anal sphincter tear complicating delivery, not associated with third degree laceration
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O70.9	Perineal laceration during delivery, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71	Other obstetric trauma
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.0	Rupture of uterus (spontaneous) before onset of labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.00	Rupture of uterus before onset of labor, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.02	Rupture of uterus before onset of labor, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.03	Rupture of uterus before onset of labor, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.1	Rupture of uterus during labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.2	Postpartum inversion of uterus
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.3	Obstetric laceration of cervix
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.4	Obstetric high vaginal laceration alone
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.5	Other obstetric injury to pelvic organs
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.6	Obstetric damage to pelvic joints and ligaments
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.7	Obstetric hematoma of pelvis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.8	Other specified obstetric trauma
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.81	Laceration of uterus, not elsewhere classified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.89	Other specified obstetric trauma
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O71.9	Obstetric trauma, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O72.0	Third-stage hemorrhage
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74	Complications of anesthesia during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.0	Aspiration pneumonitis due to anesthesia during labor and delivery

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.1	Other pulmonary complications of anesthesia during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.2	Cardiac complications of anesthesia during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.3	Central nervous system complications of anesthesia during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.4	Toxic reaction to local anesthesia during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.5	Spinal and epidural anesthesia-induced headache during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.6	Other complications of spinal and epidural anesthesia during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.7	Failed or difficult intubation for anesthesia during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.8	Other complications of anesthesia during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O74.9	Complication of anesthesia during labor and delivery, unspec
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75	Other complications of labor and delivery, not elsewhere classified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.0	Maternal distress during labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.1	Shock during or following labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.2	Pyrexia during labor, not elsewhere classified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.3	Other infection during labor
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.4	Other complications of obstetric surgery and procedures
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.5	Delayed delivery after artificial rupture of membranes
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.8	Other specified complications of labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.81	Maternal exhaustion complicating labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.89	Other specified complications of labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O75.9	Complication of labor and delivery, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O76	Abnormality in fetal heart rate and rhythm complicating labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O77	Other fetal stress complicating labor and delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O77.0	Labor and delivery complicated by meconium in amniotic fluid
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O77.1	Fetal stress in labor or delivery due to drug administration
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O77.8	Labor and delivery complicated by other evidence of fetal stress
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O77.9	Labor and delivery complicated by fetal stress, unspecified
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O80	Encounter for full-term uncomplicated delivery
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O82	Encounter for cesarean delivery without indication
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88	Obstetric embolism
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.0	Obstetric air embolism in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.01	Obstetric air embolism in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.011	Air embolism in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.012	Air embolism in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.013	Air embolism in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.019	Air embolism in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.02	Air embolism in childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.11	Amniotic fluid embolism in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.111	Amniotic fluid embolism in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.112	Amniotic fluid embolism in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.113	Amniotic fluid embolism in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.119	Amniotic fluid embolism in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.12	Amniotic fluid embolism in childbirth

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.2	Obstetric thromboembolism
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.21	Thromboembolism in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.211	Thromboembolism in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.212	Thromboembolism in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.213	Thromboembolism in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.219	Thromboembolism in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.22	Thromboembolism in childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.31	Pyemic and septic embolism in pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.311	Pyemic and septic embolism in pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.312	Pyemic and septic embolism in pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.313	Pyemic and septic embolism in pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.319	Pyemic and septic embolism in pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O88.32	Pyemic and septic embolism in childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O90.0	Disruption of cesarean delivery wound
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O90.1	Disruption of perineal obstetric wound
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O90.3	Peripartum cardiomyopathy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O90.4	Postpartum acute kidney failure
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O90.5	Postpartum thyroiditis
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O90.6	Postpartum mood disturbance
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.0	Infection of nipple associated with pregnancy, the puerperium and lactation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.01	Infection of nipple associated with pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.011	Infection of nipple associated with pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.012	Infection of nipple associated with pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.013	Infection of nipple associated with pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.019	Infection of nipple associated with pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.1	Abscess of breast associated with pregnancy, the puerperium and lactation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.11	Abscess of breast associated with pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.111	Abscess of breast associated with pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.112	Abscess of breast associated with pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.113	Abscess of breast associated with pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.119	Abscess of breast associated with pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.119	Abscess of breast associated with pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.2	Nonpurulent mastitis associated with pregnancy, the puerperium and lactation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.21	Nonpurulent mastitis associated with pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.211	Nonpurulent mastitis associated with pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.212	Nonpurulent mastitis associated with pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.213	Nonpurulent mastitis associated with pregnancy, third trimester

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O91.219	Nonpurulent mastitis associated with pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92	Other disorders of breast and disorders of lactation associated with pregnancy and the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.0	Retracted nipple associated with pregnancy, the puerperium, and lactation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.01	Retracted nipple associated with pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.011	Retracted nipple associated with pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.012	Retracted nipple associated with pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.013	Retracted nipple associated with pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.019	Retracted nipple associated with pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.1	Cracked nipple associated with pregnancy, the puerperium, and lactation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.11	Cracked nipple associated with pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.111	Cracked nipple associated with pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.112	Cracked nipple associated with pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.113	Cracked nipple associated with pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.119	Cracked nipple associated with pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.29	Other disorders of breast associated with pregnancy and the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.6	Galactorrhea
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O92.7	Other and unspecified disorders of lactation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.011	Tuberculosis complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.012	Tuberculosis complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.013	Tuberculosis complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.019	Tuberculosis complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.02	Tuberculosis complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.111	Syphilis complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.112	Syphilis complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.113	Syphilis complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.119	Syphilis complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.12	Syphilis complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.211	Gonorrhea complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.212	Gonorrhea complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.213	Gonorrhea complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.219	Gonorrhea complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.22	Gonorrhea complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.311	Other infections with a predominantly sexual mode of transmission complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.312	Other infections with a predominantly sexual mode of transmission complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.313	Other infections with a predominantly sexual mode of transmission complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.319	Other infections with a predominantly sexual mode of transmission complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.32	Other infections with a predominantly sexual mode of transmission complicating childbirth

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.511	Other viral diseases complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.512	Other viral diseases complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.513	Other viral diseases complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.519	Other viral diseases complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.52	Other viral diseases complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.611	Protozoal diseases complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.612	Protozoal diseases complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.613	Protozoal diseases complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.619	Protozoal diseases complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.62	Protozoal diseases complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.811	Other maternal infectious and parasitic diseases complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.812	Other maternal infectious and parasitic diseases complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.813	Other maternal infectious and parasitic diseases complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.819	Other maternal infectious and parasitic diseases complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.82	Other maternal infectious and parasitic diseases complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O98.919	Unspecified maternal infectious and parasitic disease complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.011	Anemia complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.012	Anemia complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.013	Anemia complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.019	Anemia complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.02	Anemia complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.111	Other diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.112	Other diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.113	Other diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.119	Other diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.12	Other diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.21	Obesity complicating pregnancy, childbirth, and the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.280	Endocrine, nutritional and metabolic diseases complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.281	Endocrine, nutritional and metabolic diseases complicating pregnancy, first trimester

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.282	Endocrine, nutritional and metabolic diseases complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.283	Endocrine, nutritional and metabolic diseases complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.284	Endocrine, nutritional and metabolic diseases complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.310	Alcohol use complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.311	Alcohol use complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.312	Alcohol use complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.313	Alcohol use complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.314	Alcohol use complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.320	Drug use complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.321	Drug use complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.322	Drug use complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.323	Drug use complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.324	Drug use complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.33	Smoking (tobacco) complicating pregnancy, childbirth, and the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.8	Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.81	Abnormal glucose complicating pregnancy, childbirth and the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.810	Abnormal glucose complicating pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.84	Bariatric surgery status complicating pregnancy, childbirth and the puerperium
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.84	Bariatric surgery status complicating pregnancy, unspecified trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.841	Bariatric surgery status complicating pregnancy, first trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.842	Bariatric surgery status complicating pregnancy, second trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.843	Bariatric surgery status complicating pregnancy, third trimester
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	O99.844	Bariatric surgery status complicating childbirth
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	I10	Z33.1	Pregnant state, incidental
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	9279009	extra-amniotic pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	14418008	precocious pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	41587001	third trimester pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	45307008	extrachorial pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	47200007	high risk pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	57630001	first trimester pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	58532003	unwanted pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	59466002	second trimester pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	65727000	intrauterine pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	72892002	normal pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	77386006	patient currently pregnant
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	83074005	unplanned pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	102872000	pregnancy on oral contraceptive
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	102873005	pregnancy on intrauterine device
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	102875003	surrogate pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169560008	pregnant - urine test confirms
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169561007	pregnant - blood test confirms
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169562000	pregnant - V.E. confirms
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169563005	pregnant - on history
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169564004	pregnant - on abdominal palpation
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169565003	pregnant - planned

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169566002	pregnant - unplanned - wanted
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169567006	pregnant -unplanned-not wanted
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	169568001	unplanned pregnancy unknown if child is wanted
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	199715003	grand multiparity with antenatal problem
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	237233002	concealed pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	237238006	pregnancy with uncertain dates
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	237239003	low risk pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	237240001	teenage pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	237241002	viable pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	237242009	non-viable pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	237244005	single pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	248985009	presentation of pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	281307002	uncertain viability of pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	314204000	early stage of pregnancy
000275	CAD	8	E	Pregnancy	Diagnosis/Condition/Problem	SNM	442478007	combined tubal and intrauterine pregnancy
000212	CAD	8	E	Patient reason for ACE inhibitor or ARB decline	Negation Rationale	SNM	134397009	angiotensin converting enzyme inhibitor declined
000212	CAD	8	E	Patient reason for ACE inhibitor or ARB decline	Negation Rationale	SNM	401084003	angiotensin II receptor antagonist declined
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	21745	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	21747	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	21703	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	21704	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	22855	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	21990	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	21738	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	22259	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	21815	
000160	CAD	8	E	Medical reason	Negation Rationale	HL7	22261	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	19729	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	21741	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	21746	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	21743	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	21710	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	21708	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	22851	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	14880	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	22260	
000174	CAD	8	E	Patient reason	Negation Rationale	HL7	15985	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22168	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22169	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22165	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22166	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22167	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21493	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19731	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19730	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19733	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19735	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19734	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19736	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21744	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22024	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22023	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21706	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21709	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21707	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21732	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21706	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21731	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21733	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21728	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21729	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21730	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21734	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22867	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21735	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22866	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22865	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21568	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	21408	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22907	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22909	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22911	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22913	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22912	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22858	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22857	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	22859	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19989	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19990	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19988	
000200	CAD	8	E	System Reason	Negation Rationale	HL7	19987	

This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0070 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Chronic Stable Coronary Artery Disease: Beta-Blocker Therapy--Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)
De.2 **Brief description of measure**: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have prior MI or a current or prior LVEF <40% who were prescribed beta-blocker therapy
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness, Equity De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, High resource use 1a.2 1a.3 **Summary of Evidence of High Impact:** •16.3 million Americans are living with coronary heart disease – of that 16.3 million, 54% are men and 46% are women. (1) •Coronary heart disease makes up more than half of all cardiovascular events in men and women less than 75 years of age. (1) •The lifetime risk of developing coronary heart disease after age 40 is 49% for men and 32% for women. (1) •The incidence of coronary heart disease in women lags behind men by 10 years for total coronary heart disease and by 20 years for more serious clinical events such as myocardial infarction and death.(1) •Coronary heart disease caused approximately 1 of every 6 deaths in the United States in 2007. (1) •While death rates have fallen from 1968 to the present, coronary heart disease is the largest killer of men and women in the United States. (1) It has been estimated that approximately 47% of this decrease is attributed to treatments (medical and surgical), while approximately 44% is attributed to changes in risk	**1a** C☐ P☐ M☐ N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

factors. (1)

•In 2007, the estimated direct and indirect cost for coronary heart disease in the United States is $177.5 billion. (1)

•In 2006, coronary artery disease was the most expensive condition treated in US hospitals at a cost of $52.6 billion (2) and accounted for 5% of total hospitalization costs.(3)

•Thirty percent of Medicare's total expenditures are applied to cardiovascular disease.(4)

•In 2007, $5.2 billion was spent on outpatient visits related to chronic ischemic heart disease.(5)

1a.4 **Citations for Evidence of High Impact:** (1) Roger VL, Go AS, Lloyd-Jones DM, et al; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2011 update: a report from the American Heart Association. Circulation. 2011;123:e000–e000. Available at: http://circ.ahajournals.org/cgi/reprint/CIR.0b013e3182009701v1
(2) Andrews RM. The national hospital bill: the most expensive conditions by payer, 2006. Agency for Healthcare Research and Quality, Statistical Brief #59. 2008. Available at: http://www.hcup-us.ahrq.gov/reports/ statbriefs/ sb59.pdf.
(3) Agency for Healthcare Research and Quality. HCUP Facts and Figures, 2006: Statistics on Hospital-based Care in the United State. Available at: http://www.hcup-us.ahrq.gov/reports/factsandfigures/facts_figures_2006. jsp#ex4_2b.
(4) Centers for Medicare and Medicaid Services. Health Care Financing Review: Medicare & Medicaid Statistical Supplement. Table 10.4: Hospital Outpatient bills, covered charges, and program payments under medicare by selected reasons for the visit: calendar year 2007. Baltimore, MD: Centers for Medicare and Medicaid Services; 2008. Available at"
http://www.cms.gov.MedicareMedicaidStatSupp/downloads/2008Table10.4.pdf
(5) Trogdon JG, Finkelstein EA, Nwaise IA, Tangka FK, Orenstein D. The economic burden of chronic cardiovascular disease for major insurers. Health Promotion Practice. 2007;8(3):234-242

1b. Opportunity for Improvement

1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Improvement in the number of patients with CAD who have prior myocardial infarction or LVEF <40% who are prescribed beta-blocker therapy.

1b.2 **Summary of data demonstrating performance gap (variation or overall poor performance) across providers:**
Although there have been improvements in the prescription rates of secondary prevention medications for CAD patients, a gap persists between the benefits demonstrated with these medications in clinical trials and the effectiveness observed in clinical practice. One potential explanation for this discrepancy is suboptimal adherence to secondary prevention medications in practice compared with clinical trials, where adherence is often closely monitoredError! Bookmark not defined. One study found that over a median follow up of 4.1 years, medication nonadherence to statins, ACE inhibitors, and beta-blockers was common, occurring in approximately 1 in 4 patients. Among patients dispensed beta-blockers (n = 11,865), 28.8% were nonadherent. (2)

A study conducted by Rabus and colleagues followed 73 patients who were diagnosed to have CAD were followed up for 5 years. They concluded, there was sub-optimal prescribing of secondary prevention drugs and absence of continuity of prescribing these secondary prevention drugs in pharmaceutical care of coronary artery disease patients.

- The 'initial prescribing rate' at discharge was found to be 55% for beta-blockers.
- 'Continuity of prescribing' for 5 years 20% for beta-blockers. (3)

Berthiaume and colleagues conducted a study to evaluate the effect of a managed care organization's intervention program in optimizing secondary prevention of CAD . The prescription rates for all 3 medications used in secondary prevention of CAD consistently improved from 2000 to 2004. During this time

1b
C ☐
P ☐
M ☐
N ☐

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

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

period, use of beta-blockers increased from 36% to 47%. (1

From 1998-2000,
- 63.9% of patients discharged after an acute myocardial infarction were discharged on a beta-blocker (4)

1b.3 Citations for data on performance gap:
(1) Berthiaume JT, Davis J, Taira DA, Thein KK. A managed care organization's use of integrated health management to improve secondary prevention of coronary artery disease. American Journal of Managed Care. 2007;13:142-147.

(2) Ho PM, Magid DJ, Shetterly SM, et al. Medication nonadherence and adverse outcomes in CAD patients. American Heart Journal. 2008;155(4):772-779.

(3) Rabus SA, Izzettin FV, Sancur M, Karakaya O, Kargin R, Yakut C. Five-year follow-up of drug utilization for secondary prevention in coronary artery disease. Pharmacology World and Science. 2008;30(6)753-758.

(4) Technical Appendix to McGlynn EA, Asch SM, Adams JL, et al. Who is at greatest risk for receiving poor quality health care? N Engl J Med 2006;354:1147-1156. Available at http://www.rand.org/pubs/working_papers/WR-174-1. Accessed January 2008.

1b.4 Summary of Data on disparities by population group:
We are not aware of any publications/evidence outlining disparities in this area.

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Nonadherence to cardioprotective medications is prevalent among outpatients with CAD and can be associated with a broad range of adverse outcomes, including all-cause and cardiovascular mortality, cardiovascular hospitalizations, and the need for revascularization procedures.

A patient with a diagnosis of CAD and LVEF <40% should be taking either bisoprolol, carvedilol, or sustained release metoprolol succinate. While all beta-blockers appear to be of equal efficacy in patients with chronic stable coronary artery disease, these three medications have specifically shown to reduce mortality in patients with reduced LVEF.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**

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

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines*)**:**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*)**:**
It is beneficial to start and continue beta-blocker therapy indefinitely in all patients who have had MI, acute coronary syndrome, or left ventricular dysfunction with or without heart failure symptoms, unless

1c
C☐
P☐
M☐
N☐

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

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

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

contraindicated (Class I Recommendation, Level A Evidence). (ACC/AHA, 200723)

Beta-blockers (using 1 of the 3 proven to reduce mortality, i.e., bisoprolol, carvedilol, and sustained release metoprolol succinate) are recommended for all stable patients with current or prior symptoms of HF and reduced LVEF, unless contraindicated. (Class I, Level of Evidence: A) (ACC/AHA, 2009)

1c.10 **Clinical Practice Guideline Citation:** Fraker JD, Fihn SD, writing on behalf of the 2002 Chronic Stable Angina Writing Committee. 2007 chronic angina focused update of the ACC/AHA 2002 Guidelines for the Management of Patients with Chronic Stable Angina: a report of the American College of Cardiology/American Heart
Association Task Force on Practice Guidelines Writing Group to Develop the Focused Update of the 2002 Guidelines for the Management of Patients with Chronic Stable Angina. J Am Coll Cardiol. 2007;50:2264-2274

Hunt SA, Abraham WT, Chin MH, et al. 2009 focused update incorporated into the ACC/AHA 2005 guidelines for the diagnosis and management of heart failure in adults: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2009;53:xxx–xxx. http://content.onlinejacc.org/cgi/content/full/j.jacc.2008.11.013v1. Accessed March 26, 2009

1c.11 **National Guideline Clearinghouse or other URL:**

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

1c.13 **Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**
ACC/AHA Classification of Recommendations and Levels of Evidence
Classification of Recommendations
Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.
Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb: Usefulness/efficacy is less well established by evidence/opinion.
Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.
Level of Evidence
Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.
Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies.
Level of Evidence C: Only consensus

1c.14 **Rationale for using this guideline over others:**
It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other healthcare providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to included documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in the quality of care.

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

1

Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?**
Rationale:

1
Y☐
N☐

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)

Eval Rating

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

2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Patients who were prescribed* beta-blocker therapy** *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: •For patients with prior MI, no recommendations or evidence cited in current chronic stable angina guidelines for preferential use of specific agents •For patients with prior LVEF <40%, beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** Once during the measurement period **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** See attached for EHR Specifications. For Claims/Administrative: Report CPT II Code 4006F: Beta-blocker therapy prescribed	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have prior MI or a current or prior LVEF <40% **2a.5 Target population gender:** Female, Male **2a.6 Target population age range:** Aged 18 years and older **2a.7 Denominator Time Window (***The time period in which cases are eligible for inclusion in the denominator***):** 12 consecutive months **2a.8 Denominator Details (***All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):** See attached for EHR Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT) AND CPT category II code 3021F - Left ventricular ejection fraction (LVEF) <40% or documentation of moderately or severely depressed left ventricular systolic function	
2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, allergy, intolerant, bradycardia, AV block without permanent pacemaker, arrhythmia, hypotension, asthma, other medical reasons) Documentation of patient reason(s) for not prescribing beta-blocker therapy (eg, patient declined, other patient reasons) Documentation of system reason(s) for not prescribing beta-blocker therapy (eg, other reasons attributable to the health care system **2a.10 Denominator Exclusion Details (***All information required to collect exclusions to the denominator,*	**2a-specs** **C**☐ **P**☐ **M**☐ **N**☐

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

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

including all codes, logic, and definitions):
See attached for EHR Specifications.
For Claims/Administrative:
Documentation of medical reason(s) for not prescribing beta-blocker therapy Append modifier to CPT II code 4006F-1P
Documentation of patient reason(s) for not prescribing beta-blocker therapy
Append modifier to CPT II code 4006F-2P

Documentation of system reason(s) for not prescribing beta-blocker therapy
Append modifier to CPT II code 4006F-3P

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
See Attached for calculation algorithm.

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

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.pinnacleregistry.org

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment PCPI_CAD-7_Betablocker MI or LVEF NQF 0070.pdf

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

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Home, Ambulatory Care: Office, Ambulatory Care: Clinic, Nursing home (NH) /Skilled Nursing Facility (SNF), Ambulatory Care: Hospital Outpatient, Assisted Living, Group homes

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS	
2b. Reliability testing 2b.1 **Data/sample** *(description of data/sample and size)*: Additional data is available in section 4 of the CAD measure testing summary. 2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)*: Additional data is available in section 4 of the CAD measure testing summary. 2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*: Additional data is available in section 4 of the CAD measure testing summary.	**2b** C☐ P☐ M☐ N☐
2c. Validity testing 2c.1 **Data/sample** *(description of data/sample and size)*: 2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*: All PCPI performance measures are assessed for content validity by expert work group members during the development process. Additional input on the content validity of draft measures is obtained through a 30-day public comment period and by also soliciting comments from a panel of consumer, purchaser, and patient representatives convened by the PCPI specifically for this purpose. All comments received are reviewed by the expert work group and the measures are adjusted as needed. Other external review groups (eg, focus groups) may be convened if there are any remaining concerns related to the content validity of the measures. 2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:	**2c** C☐ P☐ M☐ N☐
2d. Exclusions Justified 2d.1 **Summary of Evidence supporting exclusion(s):** Additional data is available in section 5 of the CAD measure testing summary. 2d.2 **Citations for Evidence:** Additional data is available in section 5 of the CAD measure testing summary. 2d.3 **Data/sample** *(description of data/sample and size)*: Additional data is available in section 5 of the CAD measure testing summary. 2d.4 **Analytic Method** *(type analysis & rationale)*: Additional data is available in section 5 of the CAD measure testing summary. 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Additional data is available in section 5 of the CAD measure testing summary.	**2d** C☐ P☐ M☐ N☐ NA☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: This measure does not employ the use of risk adjustment. 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: 2e.3 **Testing Results** *(risk model performance metrics)*: 2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:**	**2e** C☐ P☐ M☐ N☐ NA☐

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

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

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

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

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; ... [2]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [3]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and w ... [4]

2f. Identification of Meaningful Differences in Performance

2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: Additional data is available in section 1 of the CAD measure testing summary.

2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*:
Additional data is available in section 1 of the CAD measure testing summary.

2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
Additional data is available in section 1 of the CAD measure testing summary.

2f C☐ P☐ M☐ N☐

2g. Comparability of Multiple Data Sources/Methods

2g.1 **Data/sample** *(description of data/sample and size)*: Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary.

2g.2 **Analytic Method** *(type of analysis & rationale)*:
Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary.

2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*:
Additional data is available in sections 6,7,8,9, and 10 of the CAD measure testing summary.

2g C☐ P☐ M☐ N☐ NA☐

2h. Disparities in Care

2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The measure is not stratified by patient groups or cohorts that could potentially be affected by disparities in care, nor are we aware of any existing research identifying disparities in care that may be relevant to this measure.

2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**
We are not aware of any relevant disparities that have been identified.

2h C☐ P☐ M☐ N☐ NA☐

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

2

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

2 C☐ P☐ M☐ N☐

3. USABILITY

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

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 **Current Use:** In use

3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*):
This measure is not yet used in any public reporting initiative. The measure will, however, be eligible for inclusion in the CMS PQRS and other government programs in 2012 and would thus provide information about clinician participation to the public. The ACCF, AHA, and PCPI believe that the reporting of such participation information is a beneficial first step on a trajectory toward the public reporting of performance results, which is most appropriate after the measures are thoroughly tested and the reliability of the performance data has been validated. Continued NQF endorsement will facilitate our ongoing

3a C☐ P☐ M☐ N☐

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

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

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

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

progress toward this public reporting objective.

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
All PCPI measures are suitable for use in quality improvement initiatives and are made freely available on the PCPI website and through the implementation efforts of medical specialty societies and other PCPI members. The PCPI strongly encourages the use of its measures in QI initiatives and seeks to provide information on such initiatives to PCPI members.

CMS PQRI program measure #7
2007: claims 24.1 %
2008: claims 75.8 %
2009:, registry
2010: registry, EHR

The American Heart Association's Get With The Guidelines®-Outpatient (GWTG-O) is a virtual performance improvement program that will improve adherence to evidence-based care in the outpatient setting, including specialist practices, general healthcare practices and health clinics. GWTG-Outpatient historically has had a long history of quality improvement for cardiovascular care. They have published 65 publications over the past 10 years. This program is designed to assist healthcare professionals in the outpatient setting to provide the best possible care to patients. This program collects a number of clinical measures for primary and secondary prevention. Clinical measure sets include those developed by American Heart Association, including those co-developed with other organizations, such as the American College of Cardiology Foundation and the American Medical Association, as well as other National Quality Forum endorsed measures.

Through this program, we collect data on clinical measures affecting a number of cardiovascular related conditions including, atrial fibrillation, coronary artery disease, heart failure, hypertension, diabetes, and preventative care. The primary analytical system used is Duke Clinical Research Institute. Get With The Guidelines®-Outpatient is a quality improvement program that can be utilized for Maintenance of Certification (MOC) with groups like American Board of Internal Medicine (ABIM) and American Board of Family Medicine (ABFM). ABIM has confirmed that the reports received from Get With The Guidelines-Outpatient can be utilized in completion of their Self-Directed Practice Improvement Module (PIM). The Self-Directed PIM provides one pathway for earning practice performance credit in ABIM's MOC program. This program includes several integral components: A preliminary Continuing Education (CE) course for the care team, data submission and reporting that is integrated with existing Electronic Health Records (EHRs)/health technology platforms, corresponding professional and provider education including webinars, online tools and resources, digital access to reference materials and videos through the Get With The Guidelines®-Outpatient website (http://outpatient.heart.org). The free continuing education activity titled, Outpatient Quality Improvement Focus, addresses the quality chasm and treatment gap, presents the benefits of quality improvement and identifies the steps necessary for implementation in the practice setting. This continuing education activity is certified for physicians, nurses and pharmacists.

The American College of Cardiology Foundation's Cardiology Practice Improvement Pathway (CPIP) uses clinical measure sets that are developed and specified by the American College of Cardiology Foundation with the American Heart Association and the American Medical Association's Physician Consortium for Performance Improvement for Hypertension, Stable Coronary Artery Disease, Heart Failure, and Atrial Fibrillation/Atrial Flutter. This program is intended as an approved quality improvement product that can be applied toward ABIM's Part IV practice performance requirement for Maintenance of Certification (ABIM AQI application submitted). They are in the process of creating a homepage on the Cardiosource.org homepage. The URL will be cardiosource.org/cpip. The web-based tool will be available after spring 2011. Through an online webinar hosted in November 2010, CPIP anticipates enrolling 50 - 100 practices during 2011 which will provide data from about 500-1,000 cardiologists. This ACCF initiative has contracted with the NY QIO: IPRO to analyze and scores based on thresholds. Of the 100 points needed to achieve recognition in the program, 70 come directly from clinical points such as the Heart Failure measures that are being submitted to NQF for consideration. IPRO will audit 5% of practices who submit their data for recognition evaluation.

The American College of Cardiology Foundation's has an Performance Improvement program entitled "A New Era" which is an educational format approved for credit by the American Medical Association (AMA) and the American Nursing Credentialing Center. This continuing medical education program blends both quality improvement and educational methodologies to provide a high quality learning experience that impacts changes to practice. These activities are structured, long-term processes in which a healthcare professional learns about the heart failure specific performance metrics, uses metrics to retrospectively assess his practice, applies these metrics prospectively over a useful interval, and reevaluates his performance. As part of this process, clinicians set goals for change and engage in structured learning activities to improve their performance. As of December 6th, 2010:
- 425 clinicians have enrolled in A New ERA
- The data is generated from all but four states (Montana, New Hampshire, South Dakota, and Wyoming)
- 82% are physicians
- 90% agreed or strongly agreed that performance metric data were valuable
- 80% agreed or strongly agreed that performance metric data review would help them improve their practice
- No one has finished the program, as it takes several months to do so

In 2008, the American College of Cardiology Foundation launched the PINNACLE program (formerly known as the Improving Continuous Cardiac Care or IC3). This was the first, national, prospective, outpatient based cardiac QI registry in the US. While participation is voluntary, this registry collects a variety of longituditional patient data at the point of service, including patients' symptoms, vital signs, medication, and recent hospitalizations. Jointly developed ACCF/AHA/PCPI measures for Coronary Artery Disease, Heart Failure, and Atrial Fibrillation. Data collection is achieved in 2 ways for the practices: paper forms or practice's electronic medical record data collection systems. The primary analytical system used is St. Luke's Mid America Heart Institute. The ACCF registry, PINNACLE, pulls data from outpatient facilities via paper flowsheets or 14 EHR vendors. As of December 10, 2010, there are 47 practices collecting data at 200 sites with 276,000 unique patients representing 1 million documented encounters.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 **Data/sample** *(description of data/sample and size)***:**

3a.5 **Methods** *(e.g., focus group, survey, QI project)***:**

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

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

3b.1 **NQF # and Title of similar or related measures:**
Maintenance submission of NQF #0070: Beta-Blocker Therapy—Prior Myocardial Infarction

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization **3b**
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): C☐ P☐ M☐ N☐ NA☐
3b.2 **Are the measure specifications harmonized? If not, why?**

3c. Distinctive or Additive Value
3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** **3c** C☐ P☐ M☐ N☐ NA☐

5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Although we are not currently aware of any unintended consequences related to this measure, we plan through an active redesign of the PCPI website to facilitate the collection of information on unintended consequences from the users of PCPI measures.	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Additional data is available in section 3 of the CAD measure testing summary 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Additional data is available in section 3 of the CAD measure testing summary 4e.3 **Evidence for costs:**	**4e** **C☐** **P☐** **M☐** **N☐**

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

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

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

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

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

Additional data is available in section 3 of the CAD measure testing summary 4e.4 **Business case documentation:** Additional data is available in section 3 of the CAD measure testing summary	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.2 **Point of Contact**
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-

Measure Developer If different from Measure Steward
Co.3 **Organization**
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.4 **Point of Contact**
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-

Co.5 **Submitter If different from Measure Steward POC**
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-, American Medical Association

Co.6 **Additional organizations that sponsored/participated in measure development**
American College of Cardiology Foundation, American Heart Association

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
Bruce Abramowitz, MD, FACC (interventional cardiology; measure implementation)
Karen Alexander, MD (cardiology; geriatrics)
Craig T. Beam, CRE (patient representative)
Robert O. Bonow, MD, MACC, FAHA, FACP (cardiology)
Jill S. Burkiewicz, PharmD, BCPS (pharmacy)
Michael Crouch, MD, MSPH (family medicine)
David C. Goff, Jr., MD, PhD, FAHA, FACP (internal medicine)
Richard Hellman, MD, FACP, FACE (endocrinology)
Thomas James, III, FACP, FAAP (health plan representative)
Marjorie L. King, MD, FACC, MAACVPR (cardiology; cardiac rehabilitation)
Edison A. Machado, Jr., MD, MBA (measure implementation)
Eduardo Ortiz, MD, MPH (guideline development)
Michael O'Toole, MD (cardiology; electrophysiology; measure implementation)

Stephen D. Persell, MD, MPH (internal medicine; measure implementation)
Jesse M. Pines, MD, MBA, MSCE, FAAEM (emergency medicine)
Frank J. Rybicki, MD, PhD (radiology)
Lawrence B. Sadwin (patient representative)
Joanna D. Sikkema, MSN, ANP-BC, FAHA (cardiology)
Peter K. Smith, MD (thoracic surgery)
Patrick J. Torcson, MD, FACP, MMM (hospital medicine)
John B. Wong MD, FACP (internal medicine)

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Ad.2 **If adapted, provide name of original measure:** Maintenance submission of NQF #0070: Beta-Blocker Therapy—Prior Myocardial Infarction
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2003
Ad.7 **Month and Year of most recent revision:** 05, 2009
Ad.8 **What is your frequency for review/update of this measure?** Every 3 years or as new evidence becomes available that materially affects the measures
Ad.9 **When is the next scheduled review/update for this measure?** 05, 2012

Ad.10 **Copyright statement/disclaimers:** This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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Limited proprietary coding is contained in the measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The AMA, the ACC, the AHA, the Consortium and its members disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specifications.

Ad.11 -13 Additional Information web page URL or attachment: Attachment Testing Summary CAD NQF Final_10_10.pdf
Date of Submission (*MM/DD/YY*)**:** 01/20/2011

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

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

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

AND

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

AND

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

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

Page 8: [3] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;**Error! Bookmark not defined.** OR

rationale/data support no risk adjustment.

Page 8: [4] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

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

PCPI Performance Measure Testing Results – Chronic Stable Coronary Artery Disease

The PCPI Testing Protocol outlines the comprehensive set of tests that should be conducted in different practice settings, using different data sources, for each performance measurement set. The PCPI recognizes that multiple testing projects will be needed to achieve the required test results for each measurement set. Moreover, testing and surveillance should be part of continued evaluation and updating of the measures.

This document presents results for the American College of Cardiology (ACC)/American Heart Association (AHA)/ PCPI Hypertension Physician Performance Measures from the CMS PQRI program, the DOQ program, a peer-reviewed study, a CAD measure pilot testing project and the Cardio-HIT project.

1. Where are the measures used and what are the documented performance rates ?

Performance rates for individual measures are found to vary across the measure reporting and testing programs. This is expected, in that the performance rates are derived from different data sources, different practice sites, and variation in both the program implementation of the measures and approaches to implementation of the measures at individual practices or by the physicians in the practice sites included in the testing project. Variation in performance rates across practice sites suggests that the measure is able to differentiate among practices. In addition, no single relatively high value of performance for a measure should be used as an indication of that measure being "topped out", and hence no longer important or meaningful to measure.

PCPI #	**NQF endorsed (#)**	**Measure**	**CMS PQRI**[1] (years, data source, performance 2007, 2008)	**DOQ-IT**[2] (performance mean)	**Persell Testing Project**[3] (performance)	**Cardio- HIT Phase II** [4](performance)
1		Blood pressure Measurement	-	86.9%	97.6%	
2		Lipid profile	#152 2009: claims, registry	83.3%	81.6%	
3	0065	Symptom and activity assessment	#196 2010: registry, MG			
4a		Smoking cessation (Queried)				
4b		Smoking cessation (Intervention)				
5	0067	Antiplatelet therapy	#6 2007: claims **72.6** % 2008: claims **69.3 %** 2009: claims, registry 2010: claims, registry, MG	82.2%	81.9%	83.95%
6	0074	Drug therapy for lowering LDL-cholesterol	#197 2010: registry, MG	50.0%	85.3%	70.91%
7	0070	Beta-blocker therapy – prior myocardial infarction	#7 2007: claims **24.1** % 2008: claims **75.8 %** 2009:, registry 2010: registry, EHR	50.0%	82.8%	69.17%
8	0066	ACE inhibitor or ARB therapy	#118 2008: claims **9.5 %** 2009: claims, registry 2010: registry	80%	85.2%	75.66%
9		Screening for diabetes				

[1] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

** Surrogate testing refers to testing measures, and the corresponding data elements (eg, numerators and denominators), that are similar to those in the PCPI measures.*

What are the reported exception rates? (# patients with valid exceptions / (# patients in denominator)

It is expected that reported exception rates will vary across measures and across the measure reporting and testing programs. This is primarily due to differences in the types of measure (eg, medications versus screening), data sources examined in testing, variation among the practice sites where the measures were implemented, and the types and number of reasons included in the measure specification (ie, medical reason, patient reason, and system reason). Any one value for a reported exception rate, in of itself, should not be interpreted as indication of gaming or patient selection behavior.

Measure	CMS PQRI[5]	Doren [6]	Cardio- HIT Phase II [7]
Blood pressure Measurement	This measure has no exceptions.		
Lipid profile	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		
Smoking cessation (Queried)	This measure has no exceptions.		
Smoking cessation (Intervention)	This measure has no exceptions.		
Antiplatelet therapy	4.2%	3.5%	4.38%
Drug therapy for lowering LDL-cholesterol	-	7.3%	8.56%
Beta-blocker therapy – prior myocardial infarction	8.1%	25.3%	14.53%
ACE inhibitor or ARB therapy	Not reported	10.1%	11.86%
Screening for diabetes	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		

[2] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

[3] Persell SD, Wright JM, Thompson JA, Kmetik KS, Baker DW. Automated review of electronic health records to assess quality of care for outpatients with Coronary Artery Disease. Arch Intern Med. 2006;166:2272-2277

[4] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

[5] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

[6] Doran T, Fullwood C, Reeves D, Gravelle H, and Roland M. Exclusion of Patients from Pay-for-Performance Targets by English Physicians. New England Journal of Medicine. July 17, 2008.

[7] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

2. Which tests have been carried out in which settings or data sources? Tests of feasibility/ implementation, reliability, validity, and unintended consequences conducted in a variety of practice settings including (eg solo practices, large practices, academic practices, safety-net practices, single- and multi-specialty groups).

Setting / Data Source	Medical Record (Gold Standard) (Paper or Electronic)	EHR Reporting	Registry	Administrative Data (single source)	Administrative Data (multiple sources)	Administrative Data Plus Clinical Data
Solo Practice						
Specialty Practice	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Safety-net practice		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Academic Setting		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Community Setting	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			

Feasibility Testing

3. How confident are we that practices can accurately collect and report these measures in a sustainable fashion?

These measures have been tested and found to be generally feasible in EHR, paper, and claims data sources. Results from a study published by Persell, the AMA-sponsored Cardio-HIT project, and the CMS Doctors' Office Quality (DOQ) IT Project, as well as use in CMS's PGP Demonstration project and EHR demonstration project revealed that the CAD measures are feasible to collect, as currently specified.

The feasibility of a PCPI performance measure/measure set refers to:

- Whether or not data are stored in a codified field
- Which clinical codes sets are utilized/available
- Where in the record the data are found
- Necessary clarifications needed to implement the measure
- Documentation of challenges to measure implementation
- The extent to which clinical practices are able to interpret measure definitions and technical specifications, and a) integrate them into existing workflows and health information systems to collect, manage, and manipulate data elements; b) compute performance measures; and c) generate performance reports within a reasonable time frame and budget.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRS, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs
Location of data (eg, problem list, medication summary) was recorded for data elements as well as whether or not the data was codified using a standard code set such as LOINC or SNOMED

- Exported de-identified patient data to a warehouse for measure calculation -- successfully completed by all sites.
- Location of exception data useful to inform EHR design, CDS design.

Results

- Each of the practice sites mapped the data elements required for each of the CAD measures to their individual EHR and determined the additional system and work flow modifications required to integrate any additional data elements needed.
- Since each practice had a unique set of data fields, individual mapping of the data elements at the practice level was required. Each EHR required the development of additional data fields in order to achieve the functionality required to query and report on all data elements for all measures.
- An interface template was developed for each practice EHR which contains the unique set of data fields, validation requirements and acceptable values associated with ACC/AHA/PCPI measures. Using the interface template, each practice queried its EHR database to compile the data elements required for each measure. To assure consistent capture of data across a disperse set of EHR systems, the interface template identifies the submission of the prescribed coding system or standardized medical vocabulary as defined per the ACC/AHA/PCPI measure.
- It was not required that each data element be sent to the data warehouse using a specific coding system or standardized coding language but rather that each site would determine what specificity of data was feasible based on the current structure of data in their EHR. The consensus of the Cardio-HIT team was to provide industry accepted coded values (as identified by HITSP) if available. Examples include LOINC coding for lab tests, ICD for diagnoses and NDC for medications.
- In cases where the EHR was unable to support a medical vocabulary, an acceptable alternative was to substitute a "Y/N" value for those fields. For example, some sites were able to capture the prescription of a medication through the use of NDC codes but other sites determined that the use of Yes/No, medication prescribed (no CPT-II codes sent for medicaitons; CPT-II codes were sent for exceptions) was more feasible.

Percent of CAD Exceptions Found in Codified Data

	Problem List	Other Structured Text	Past Medical History	Free Text Notes/ Dictation	Allergy List	Drug List	Laboratory
All 4 CAD Measures	**80**	**53%**	**50%**	**16%**	**1%**	**0%**	**0%**

Doctor's Office Quality (DOQ) Project

Data Source

National feasibility study, the CMS Doctors' Office Quality[8] (DOQ) Project

Methods

Reviewers assessed the feasibility of use of the ACC/AHA/PCPI measures in offices by performing retrospective audits of paper medical records and electronic health records

Results

Limitations to feasibility were as follows:

DENOMINATOR IDENTIFICATION:

- ICD-9 coding was not always sufficient or accurate in identifying patients with CAD
- According to the specifications, patients were not required to have an office visit specifically addressing the CAD. Therefore, many patients with CAD as a secondary diagnosis were treated for other comorbid conditions during the office visit, and consequently, care processes for CAD were not present

NUMERATOR IDENTIFICATION:

- Antiplatelet Therapy
  - Site 1: Feasible with limitations.
    - Hospitalization and Transfusion documentation was not documented in a codified manner in the EHR. Available data is in a free text format.
  - Site 2: Feasible
- Symptom and activity assessment
  - Not used in this program
- Drug therapy for lowering LDL cholesterol
  - Site 1: Feasible with limitations.
    - Information on terminal illness is not documented in any codified format
  - Site 2: Feasible
- ACE inhibitor or ARB therapy
  - Site 1: Feasible with limitations.
    - LVF access code is not available or retrievable. Intolerance of drug is not obtainable.
  - Site 2: Feasible

CMS PQRI –2008 –Claims

- Three CAD measures were included in the 2008 CMS PQRI program.
- The rate of submissions accepted as appropriately coded were (2008):
  - Antiplatelet therapy **89.18** %
  - Beta-blocker therapy – prior myocardial infarction **31.69** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **65.45** %
    - **20.21** % of submissions were rejected due to an incorrect DX code
- Denominator mismatch rates were (2008):
  - Antiplatelet therapy **10.82** %
  - Beta-blocker therapy – prior myocardial infarction **68.31** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **34.55**%
    - **20.21** % of submissions were rejected due to an incorrect DX code

[8] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

Reliability Testing

4. How confident are we that the measures accurately and consistently assess the performance of physicians providing the care assessed in the measure?

Reliability is whether two abstractors, reviewing the same data from the same data source, would come to the same conclusion as to the patient meeting the measure, not meeting the measure, or qualifying as an exception.

Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing[9]

Data Source:
Paper Medical Records
Methods
A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors
Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural)
Results
Overall reliability rate for all participating clinics was **98.1**%
Kappa statistic** for individual data elements:

- Beta blocker therapy = **1.00** *(no mismatches)*
- Diagnosis of CAD = **1.00** *(no mismatches)*
- Lipid profile = **0.98**
- Statin therapy = **0.95**
- Prior myocardial infarction = **0.91**
- Antiplatelet therapy = **0.88**
- Revascularization procedure = **0.82**

***see description of kappa statistics at end of this document for more information*

Doctor's Office Quality Pilot Project

Data Source:
2 practices sites with electronic health records
Methods
Abstractor responses were compared with "gold standard" responses determined by two abstractors familiar with the data definitions and who were responsible for abstractor training.
Results

Measure	Doctor's Office Quality (DOQ) Project
Blood pressure Measurement	48 / 48 **100** % 5 / 5 **100** %
Lipid profile	48 / 48 **100** % 3 / 5 **60** %
Antiplatelet therapy	45 / 48 **94** % 5 / 5 **100** %
Drug therapy for lowering LDL-cholesterol	48 / 48 **100** % 5 / 5 **100** %
Beta-blocker therapy – prior myocardial infarction	46 / 48 **96** % 5 / 5 **100** %
ACE inhibitor or ARB therapy	46 / 48 **96** % 4 / 5 **80** %

Measure Exceptions Validated

(and specific exception

5. Are exceptions clinically appropriate and consistently documented?

Exceptions found for these measures were clinically appropriate.

AMA PCPI Testing Project: Cardio-HIT

reasons documented to inform measure maintenance)

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs

Results

All Exceptions	Medical Reason	Clinical Contraindication	Drug Allergy	Drug Interaction	Drug Intolerance
Overall (n=753)	96.3% (95.0% - 97.7%)	52.2% (48.5% - 55.8%)	14.9% (12.3% - 17.5%)	0.8% (0.2% - 1.4%)	33.0% (28.8% - 35.6%)
Antiplatelet therapy (n=97)	99.4% (97.8% - 100.9%)	28.9% (19.9% - 37.9%)	59.7% (50.0% - 69.5%)	5.8% (1.2% - 10.5%)	5.6% (0.99% - 10.1%)
Drug therapy for lowering LDL-C (n=394)	94.9% (92.7% - 97.0%)	40.6% (35.7% - 45.4%)	6.9% (4.4% - 9.4%)	0.00% (0.0% - 0.0%)	52.5% (47.6% - 57.4%)
Beta-blocker therapy for prior MI (n=114)	99.5% (98.1% - 100.8%)	83.7% (77.0% - 90.5%)	4.4% (0.6% - 8.2%)	0.0% (0.0% - 0.0%)	11.9% (5.9% - 17.8%)
ACE inhibitor/ARB therapy (n=121)	95.8% (92.3% - 99.3%)	78.7% (71.4% - 86.0%)	14.9% (8.5% - 21.2%)	0.0% (0.0% - 0.0%)	6.4% (2.0% - 10.8%)

MEASURE EXCLUSION DOCUMENTATION

MEASURE	VERBATIM DOCUMENTATION FOR EXCLUSIONS
ACE inhibitor or ARB therapy	I am going to keep pt off of ACE inhibitor therapy at this time, given the low blood pressure, and hypertrophic myopathy.
	Left nephrectomy.
	Altace, Cough;
	Diovan 320 Mg, 1 PO qd stopped 10/22 for increased cough
	Pt is somewhat hypertensive at today's office visit, and being a diabetic, would benefit from being on an ARB (cannot take ACE inhibitors). We had stopped the Cozaar because of a cough in 2006, but pt tells me that the cough has never gone away. Pt tells me that the cough did improve somewhat after stopping the Cozaar.
	The patient has been complaining recently on dry cough. Upon questioning, seems like cough started at the time when Micardis was started. Patient advised to hold Micardis and see if this will relieve cough.
	The patient has had significant improvement in his dizziness since reduction in the Avalide dose.
	Patient has been very noncompliant with follow up unless in a nursing home and would not use Coumadin or antiarrhythmics, which needed careful and dependable follow up.
Antiplatelet therapy	Antiplatelets, Medical reason
	Aspirin, Medical reason
	Allergy: Aspirin, Medical reason
	no antiplatelets, Pt on Coumadin
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then pt can have the upcoming procedure. A daily aspirin will also be encouraged at that time.
	The patient is to follow up with Dr. ___ Gastroenterology who noted angiodysplasia in the past. She/He is no longer on NSAIDS or aspirin. Her/His H and H have trended down overtime, and she received a transfusion with return to 10 and 30 which is our goal.
	fu subdural the patient hit pt's head on concrete after a fall on March 31. Left frontal subdural hematoma was diagnosed by CT scan. 5/1 /2007. Plavix and aspirin were stopped at that time
	I think the best thing at this time is to keep her on anticoagulation so she does not develop any further embolizations, dc asa. He/She seems to be safe and is not having any falls or any other problems related to his/her visual disturbance.
	UNWILLING TO ORDER ANTIPLATELET DUE LOW PLATELETS,ELEVATED PARTIAL THOMBOBLASTIN TIME AND POSSIBLY RELATED TO HYPERSPLENISM.

Beta-blocker therapy – prior myocardial infarction	Allergies: Beta Blockers, Reynaud's
	Beta Blocker, ? coronary artery spasm; patient had an apparent myocardial injury more than 10 years ago but has normal coronary arteries. Possibly a spasm or an embolus was raised at that point. I think that may be why patient is not on a beta blocker, but I need to review the old records.
Drug therapy for lowering LDL-cholesterol	dyslipidemia discussed niacin and patient is going to think about it
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then the pt can have the upcoming procedure. Will begin anti-lipid agents after the procedure.
	She has had a fasting lipid profile done at the last visit which showed an LDL of 143, which is slightly above goal of 130. However, her HDL was 76 which is excellent. We can discuss this at the next visit.
	For coronary disease. Pt will take aspirin and Pravachol as before. in this context, Zetia is no longer medically necessary so will discontinue

Location and Codification of Exceptions

	Allergy List		Drug List	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	145	2.07%	2	0.00%
Antiplatelet Therapy	65	1.54%	1	0.00%
Drug Therapy for Lowering LDL	31	0.00%	0	0.00%
Beta-blocker Therapy for Prior MI	21	0.00%	0	0.00%
ACE/ARB Therapy	28	7.14%	1	0.00%

	Free Text Notes/Dictation		Laboratory	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	183	25.14%	88	0.00%
Antiplatelet Therapy	28	10.71%	2	0.00%
Drug Therapy for Lowering LDL	46	4.35%	85	0.00%
Beta-blocker Therapy for Prior MI	47	44.68%	0	0.00%
ACE/ARB Therapy	62	32.26%	1	0.00%

	Other Structured		Past Medical History	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	72	48.61%	44	50.00%
Antiplatelet Therapy	7	0.00%	10	40.00%
Drug Therapy for Lowering LDL	5	0.00%	3	0.00%
Beta-blocker Therapy for Prior MI	30	46.67%	22	72.73%
ACE/ARB Therapy	30	70.00%	9	22.22%

	Problem List		
Measure	# Included	% Coded	TOTAL
All CAD Measures	114	81.58%	648
Antiplatelet Therapy	13	76.92%	126
Drug Therapy for Lowering LDL	1	100.00%	171
Beta-blocker Therapy for Prior MI	71	83.10%	191
ACE/ARB Therapy	29	79.31%	160

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)		

Allergy or intolerance	61.46%	59		
Allergy List			47	0.00%
Drug List			2	0.00%
Free Text Notes/Dictation			7	0
Past Medical History			3	0.00%
GI Tract	17.87%	17		
Allergy List			2	0.00%
Assessment List			1	0.00%
Free Text Notes/Dictation			7	9.83%
H&P			1	0.00%
Past Medical History			2	59.37%
Problem List			4	71.60%
Other doc. by pract. for not prescribing therapy	10.99%	11		
Allergy List			7	25.00%
Consultation			1	0.00%
Free Text Notes/Dictation			3	0.00%
Blood	6.20%	6		
Consultation			0	0.00%
Free Text Notes/Dictation			2	25.37%
Laboratory			1	0.00%
Past Medical History			2	0.00%
Problem List			1	100.00%
End of Life Issues	0.35%	0		
H&P			0	0.00%
Hepatic Liver	3.12%	3		
Free Text Notes/Dictation			2	0.00%
Past Medical History			1	.
Problem List			1	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)	Location Count	Percent Coded at Location
Renal	65.56%	42		
Allergy List			2	100.00%
Assessment List			15	88.05%
Consultation			0	0.00%
ED note			0	0.00%
Free Text Notes/Dictation			16	67.87%
Past Medical History			2	29.61%
Problem List			6	58.62%
Allergy or intolerance	13.73%	9		
Allergy List			9	0.00%
Other doc. by pract. for not prescribing therapy	5.62%	4		
Allergy List			2	0
Free Text Notes/Dictation			2	0
Moderate or severe aortic stenosis subaortic stenosis	3.38%	2		
Consultation			0	100.00%
Echo			0	100.00%
Free Text Notes/Dictation			0	0.00%

Past Medical History			2	0.00%
Adverse reaction to ACE inhibitor or ARB therapy	2.09%	1		
Allergy List			1	0.00%
Free Text Notes/Dictation			1	0.00%
Hyperkalemia	7.70%	5		
Allergy List			2	0.00%
Free Text Notes/Dictation			3	21.31%
End of Life Issues	0.39%	0		
Free Text Notes/Dictation			0	100.00%
Hypotension	1.13%	1		
Free Text Notes/Dictation			1	0.00%
Problem List			0	100.00%
Angioedema	0.39%	0		
ED note			0	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Comparison of Data Sources

*Note: in these projects it is recommended to always compare the secondary data source to the current gold standard of manual abstraction of the medical record.

6. Is measure collection from different data sources comparable? How does automated measure calculation compare to manual measure abstraction?

Persell Published Study[10]

Data Source:

Single health system electronic health record system

Methods

Accuracy of CAD data elements was verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRS

For patients who appeared to fail the quality measure, researchers completed a manual review of each patient's electronic chart, focusing on free text and medical tests

Results

	Automated review alone	**Automated review plus manual review of free text physician notes for cases that failed quality measures**
Blood pressure Measurement	**97.6** %	**99.2** % (+1.5% change)
Lipid profile	**81.6** %	**87.5** % (+5.9% change)
Antiplatelet therapy	**81.9** %	**96.2** % (+14.3% change)
Drug therapy for lowering LDL-cholesterol	**92.5** %	**97.2** % (+ 4.7% change)
Beta-blocker therapy – prior myocardial infarction	**82.8** %	**90.3** % (+ 7.5% change)
ACE inhibitor or ARB therapy	**85.2** %	**89.3** % (+ 4.1% change)

Discrepancies between performance measures based on EHR automated review alone and those based on automated review plus manual review were due to two types of misclassification: failure to correctly identify performance of quality measures among true, eligible patients; and failure to correctly exclude patients. The rate of misclassification from both sources of error ranged from 33% (ACE inhibitor/ARB measure) to 81% (antiplatelet therapy measure) for the individual measures.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project

46,737 eligible patients

Methods

- Translated integrated measure specifications to data fields within practice EHRs
- Accuracy of CAD data elements were verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRs
- For two samples of patients, researchers completed a manual review of each patient's electronic chart
    - Sample 1: patients who appeared to fail the quality measure (did not meet numerator nor have exception)
    - Sample 2: patients who appeared to not meet the numerator and have an exception to the quality measure

Results

Performance rates calculated automatically by the data warehouse compared to the rates of performance, opportunities for improvement and misclassification rates determined with manually abstracted data samples

- Automated review alone: Overall performance for the three measures was 76.67% and varied among the measures:
    - Antiplatelet Therapy: 83.95%
    - Drug Therapy for Lowering LDL: 70.91%
    - Beta-blocker therapy for Prior MI: 69.17%
    - ACEI/ARB therapy: 75.66%
- Manual review alone: 25.37% of the cases were identified as failing to meet the measure (opportunities for improvement):
    - Antiplatelet Therapy: 48.26%
    - Drug Therapy for Lowering LDL: 7.66%
    - Beta-blocker therapy for Prior MI: 7.12%
    - ACEI/ARB therapy: 41.49%
- Discrepancies between performance measures based on EHRs automated review alone and those based on automated review plus manual review were due to two types of misclassification:
    - identify performance among true, eligible patients
    - failure to correctly exclude patients
- The overall rate of misclassification in the automatic calculation (identified from manual review) was 32.40% and varied across the measures:
    - Antiplatelet Therapy: 5.66%
    - Drug Therapy for Lowering LDL: 52.46%
    - Beta-blocker therapy for Prior MI: 60.56%
    - ACEI/ARB therapy: 11.06%

7. If automated reporting identifies a patient as meeting the measure, what likelihood is there that manual review will validate that finding?

This test has not yet been performed for this measure set.

8. Are the individual parts of the measure (numerator, denominator, exceptions) reliably calculated, as compared to the overall measure?

This test has not yet been performed for this measure set.

9. What proportion of patients that met the measure are correctly identified?

This test has not yet been performed for this measure set.

10. What proportion of patients that do not meet the measure are correctly identified?

AMA PCPI Testing Project: Cardio-HIT

Patients Automatically Identified as Exceptions	Agreement			
Measure	Mean Rate	S.E.	95% C.I.	N
All CAD Measures	92.57%	1.13%	90.26%, 94.88%	538
Antiplatelet Therapy	88.59%	3.19%	81.83%, 95.35%	99
Drug Therapy for Lowering LDL	93.85%	1.49%	90.75%, 96.96%	261
Beta-blocker Therapy for Prior MI	93.35%	2.78%	87.27%, 99.43%	80
ACE/ARB Therapy	92.53%	2.66%	86.79%, 98.26%	97

Patients Automatically Identified as Opportunities for Improvement	Agreement			
Measure	Mean Rate	S.E.	95 % C.I.	N
Coronary Artery Disease	25.37%	1.79%	21.78%, 28.96%	592
Antiplatelet Therapy	48.26%	3.62%	40.9%, 55.63%	190
Drug Therapy for Lowering LDL	7.66%	1.63%	4.26%, 11.05%	265
Beta-blocker Therapy for Prior MI	7.12%	3.48%	0%, 14.86%	55
ACE/ARB Therapy	41.49%	5.42%	30.26%, 52.73%	83

False Positive Opportunities for Improvement - Numerator Actually Met

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	31.57%	1.91%	27.74%, 35.4%	186.89	592
Antiplatelet Therapy	37.17%	3.50%	30.04%, 44.3%	70.71	190
Drug Therapy for Lowering LDL	30.95%	2.84%	25.19%, 36.71%	81.88	265
Beta-blocker Therapy for Prior MI	7.85%	3.64%	0%, 15.89%	4.29	55
ACE/ARB Therapy	36.37%	5.30%	25.38%, 47.36%	30.01	83

False Positive Opportunities for Improvement - Exceptions Actually Found, by Measure - Weighed Sample Data

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	10.66%	1.27%	8.09%, 13.23%	63.11	592
Antiplatelet Therapy	8.91%	2.07%	4.6%, 13.22%	16.95	190
Drug Therapy for Lowering LDL	8.93%	1.75%	5.31%, 12.56%	23.64	265
Beta-blocker Therapy for Prior MI	24.46%	5.81%	12.16%, 36.77%	13.38	55
ACE/ARB Therapy	11.08%	3.46%	3.7%, 18.46%	9.14	83

EHR "In Silo" Verification

Note: initially this may be of limited usefulness until EHR functionality and use progresses

11. Can EHR products reliably identify data elements and calculate these measures?

A "dummy" data set of patient data will be provided to several EHR vendors along with EHR measure specifications. The vendors will use this test file to determine if their system can reliably calculate the measures based on intended documentation patterns.

This test has not yet been performed for this measure set.

Predictive Validity	**12. Does high performance on these measures lead to better patient outcomes?** If the scientific evidence regarding the process of care is strong and widely accepted in the field, no formal evaluation of predictive validity is necessary. If the evidence is less strong, however, it is desirable to show that high performance leads to better patient outcomes. This test has not yet been performed for this measure set. Regarding hospital measures: Several articles published in 2006 and early 2007 have begun to assess the predictive validity of CMS Core Hospital Measures (acute myocardial infarction and heart failure) as they relate to short-term mortality rates.
Unintended Consequences	**13. Have monitoring and testing uncovered unexpected consequences of measurement?** Testing should be performed for anticipated unintended consequences. Unanticipated unintended consequences should be monitored for on a long term basis as they may only occur in later stages and widespread adoption. This test has not yet been performed for this measure set.
Project Descriptions	**Doctor's Office Quality Pilot Project** Data was captured at two large physician practice groups who use two distinct EHR systems. The study population of group 1 was their fee-for service Medicare patients. The study population was all non-Medicare patients for Group 2. Once the DOQ clinical measures were developed, the practices were given technical specifications to use to capture the quality measures from their EHR system. Feasibility was assessed for all measures, and some measures were implemented. **Persell Testing Project** Persell and team performed a retrospective electronic medical chart review comparing automated measurement with a 2-step process of automated measurement supplemented by review of free-text notes for apparent quality failures for all patients with CAD from a large internal medicine practice using a commercial EHR. The 7 performance measures included the following: Antiplatelet drug, lipid-lowering drug, beta-blocker following myocardial infarction, blood pressure measurement, lipid measurement, low-density lipoprotein cholesterol control, and angiotensin-converting enzyme inhibitor or angiotensin receptor blocker for patients with diabetes mellitus or left ventricular systolic dysfunction. **Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing** A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors. Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural). **Cardio-HIT Project** The AMA received funding for Phase II of the Cardio-HIT project from the Agency for Healthcare Research and Quality (AHRQ). The AMA in collaboration with five (5) physician practice sites, the Iowa Foundation for Medical Care, and the National Committee for Quality Assurance, conducted a 2-year, observational study of exception reporting, building on the prior work under *Cardio-HIT*, a research collaborative of six (6) EHRs-enabled independent group practices that collected data and reported on nationally recognized physician performance measures for coronary artery disease and heart failure. In *Cardio-HIT Phase II*, we: (1) empirically documented the prevalence and patterns of exception reporting in these measures; (2) assessed the feasibility and accuracy of exception reporting by validating a sample of reported exceptions against manual EHRs record review; and (3) analyzed and addressed stakeholder perspectives on exception reporting to refine existing principles in the design of physician performance measures**.**

Kappa Agreement	**Kappa** — **Strength of Agreement** 0.00 — Poor 0.01 – 0.20 — Slight 0.21 – 0.40 — Fair 0.41 – 0.60 — Moderate 0.61 – 0.80 — Substantial 0.81 – 0.99 — Almost perfect Landis, J.R. and Koch, G. G. (1977) "The measurement of observer agreement for categorical data" in Biometrics. Vol. 33, pp. 159—174

AMA-PCPI Level I EHR Specifications

Clinical Topic	Chronic Stable Coronary Artery Disease (CAD)
Measure Title	Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF < 40%)
Measure #	PCPI # CAD-7 / PQRI # 7 / NQF# 0070
Measure Description	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease who also have prior MI or any current LVEF < 40% who were prescribed beta-blocker therapy within a 12 month period
Measurement Period	Twelve consecutive months
Initial Patient Population	Patient Age: Patients aged 18 years and older before the start of measurement period Diagnosis Active: Patient has a diagnosis of coronary artery disease before or simultaneously to encounter date Encounter: At least two visits with the physician, physician's assistant, or nurse practitioner during the measurement period
Denominator Statement	All patients aged 18 and older with a diagnosis of coronary artery disease who also have prior MI or a current or prior LVEF < 40%
Numerator Statement	Patients who were prescribed* beta-blocker therapy** within a 12 month period *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: -For patients with prior MI, no recommendations or evidence cited in current chronic stable angina guidelines for preferential use of specific agents -For patients with prior LVEF <40%, beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate
Denominator Exceptions	Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, allergy, intolerance, bradycardia, AV block without permanent pacemaker, arrhythmia, hypotension, asthma, other medical reasons) Documentation of patient reason(s) for not prescribing beta-blocker therapy (eg, patient declined, other patient reasons) Documentation of system reason(s) for not prescribing beta-blocker therapy (eg, lack of drug availability, financial reasons, other reasons attributable to the health care delivery system)

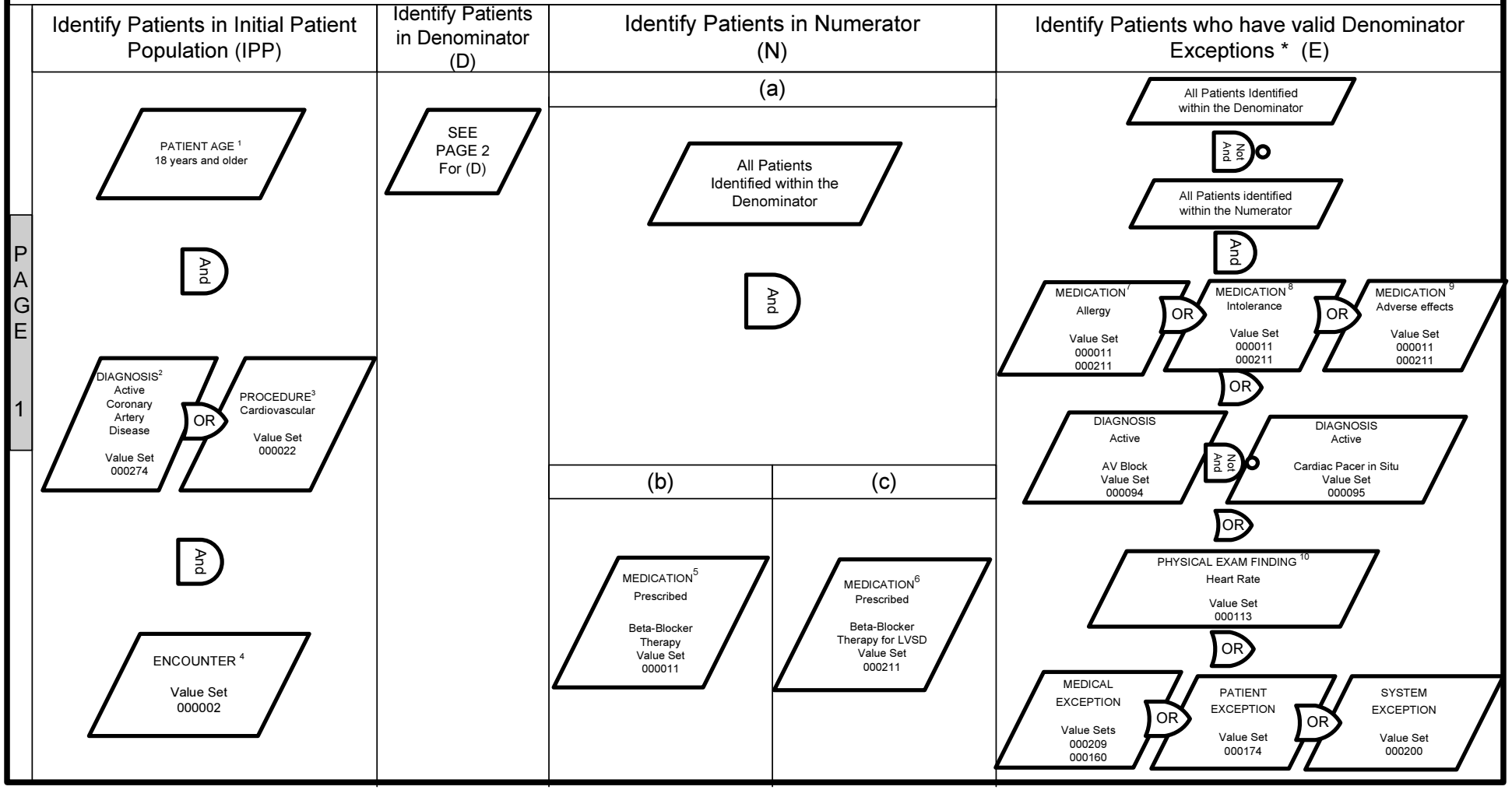
AMA - PCPI Level I EHR Specifications

Measure Logic for Chronic Stable Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Measure Description: Percentage of patients aged 18 years and older with a diagnosis of CAD who also have prior MI or any current or prior LVEF < 40% who were prescribed beta-blocker therapy within a 12 month period

Measurement Period: 12 Consecutive Months

PCPI Measure #: CAD-7 / PQRI # 7 / NQF # 0070



FLOW DIAGRAM INSTRUCTIONS:
For D: (a) is applicable to all calculations; (b), (c1) & (c2): the majority of patients will fall into (b) OR (c1) OR (c2), in the event that a patient falls into BOTH (b) and (c), please follow (c1) or (c2), as it applies;
For N: (a) is applicable to all calculations; (b) to be used when (b) was selected in the denominator column; (c) to be used when (c1) OR (c2) was selected in the denominator column;

PARAMETER SPECIFICATIONS (Value Sets are found in the Coding Appendices):
IPP: [1] Patient Age: 18 years and older before the start of measurement period; [2] Diagnosis, Active: before or simultaneously to encounter date; [3] Procedure: before or simultaneously to encounter date; [4] Encounter: ≥ to 2 visits during measurement period;
N: [5] Medication, Prescribed: active or ordered during the measurement period; [6] Medication, Prescribed: subset of beta-blocker therapy (consisting of bisoprolol, carvedilol, or sustained release metoprolol succinate) active or ordered during the measurement period;
E: [7] Medication Allergy, [8] Intolerance, and [9] Adverse Effect: the Value Set listed references the medications to which the allergy, intolerance or adverse effect exist; [10] Physical Exam Finding, Heart Rate: 2 consecutive readings at less than 50 beats per minute during the measurement period; Value Sets 000160, 000174, 000200, during the measurement period; all other Value Sets starts before or simultaneously to measurement period;

* Coded examples are NOT intended to be an exhaustive list. Exceptions will vary for each patient and situation.

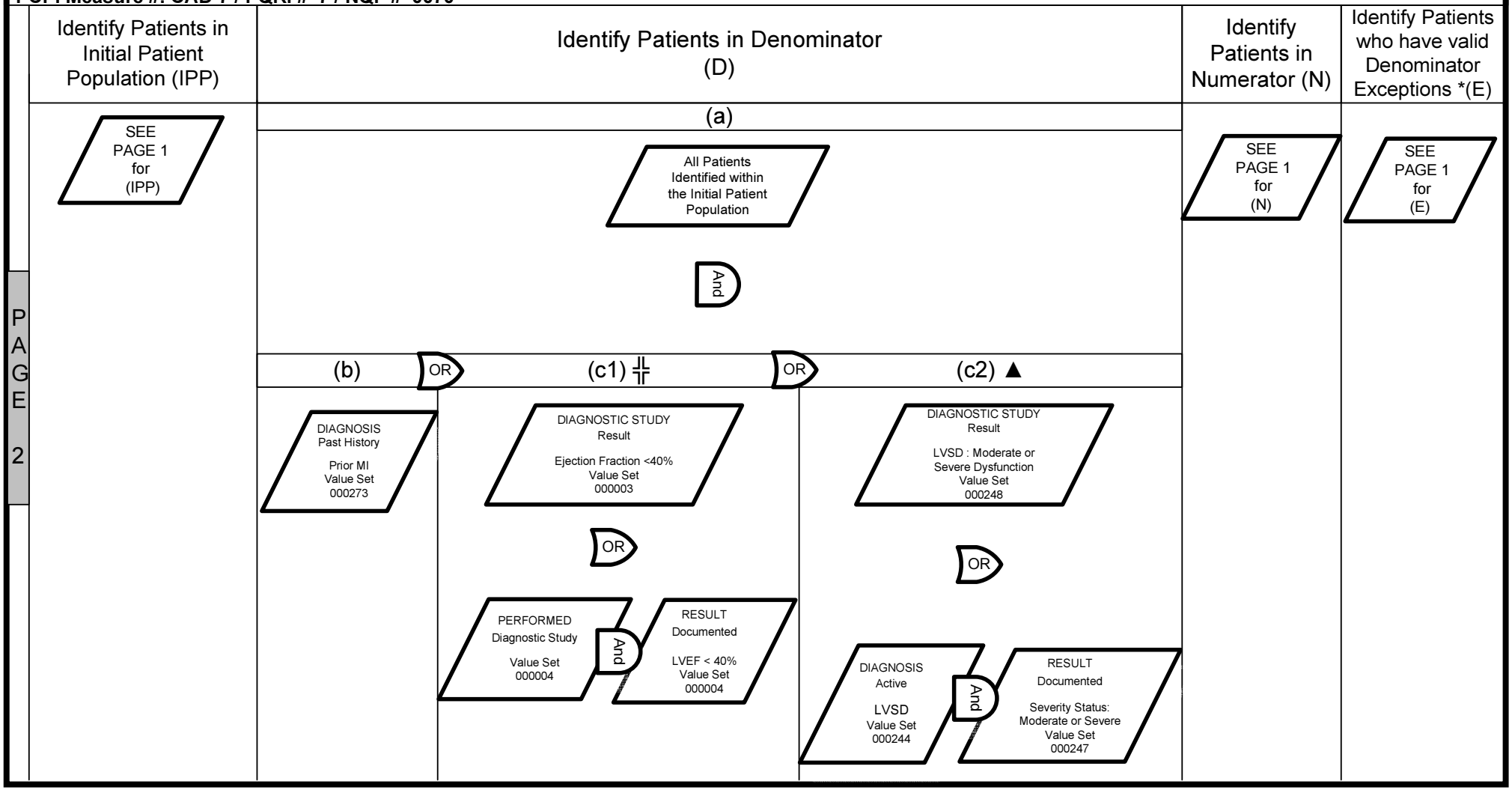
AMA - PCPI Level I EHR Specifications

Measure Logic for Chronic Stable Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Measure Description: Percentage of patients aged 18 years and older with a diagnosis of CAD who also have prior MI or any current or prior LVEF < 40% who were prescribed beta-blocker therapy within a 12 month period

Measurement Period: 12 Consecutive Months

PCPI Measure #: CAD-7 / PQRI # 7 / NQF # 0070



FLOW DIAGRAM INSTRUCTIONS:
For D: (a) is applicable to all calculations; (b), (c1) & (c2): the majority of patients will fall into (b) OR (c1) OR (c2), in the event that a patient falls into BOTH (b) and (c), please follow (c1) or (c2), as it applies;
For N: (a) is applicable to all calculations; (b) to be used when (b) was selected in the denominator column; (c) to be used when (c1) OR (c2) was selected in the denominator column

PARAMETER SPECIFICATIONS (Value Sets are found in the Coding Appendices):
D (All in D occurring before or simultaneously to measurement period): ╬ Corresponds to Quantitative representation of results documented as a numerical value in percentage format;
▲ Corresponds to Qualitative representation of results, numeric equivalents as follows (crosswalk):
Hyperdynamic: corresponds to LVEF greater than 70%
Normal: corresponds to LVEF 50% to 70% (midpoint 60%)
Mild dysfunction: corresponds to LVEF 40% to 49% (midpoint 45%)
Moderate dysfunction: corresponds to LVEF 30% to 39% (midpoint 35%)
Severe dysfunction: corresponds to LVEF less than 30%

Version 2.0

Basic Measure Calculation:

$$\frac{(N)}{(D) - (E)} = \%$$

The PCPI strongly recommends that exception rates also be computed and reported alongside performance rates as follows:

Exception Calculation:

$$\frac{(E)}{(D)} = \%$$

Exception Types:
E= E1 (Medical Exceptions) + E2 (Patient Exceptions) + E3 (System Exceptions)
For patients who have more than one valid exception, only one exception should be be counted when calculating the exception rate

Initial Patient Population (IPP)	Denominator (D)	Numerator (N)	Denominator Exceptions (E)
Definition: The initial patient population identifies the general group of patients that the performance measureis designed to address; usually focused on a specific clinical condition (e.g., coronary artery disease, asthma). For example, a patient aged 18 years and older with a diagnosis of CADwho has at least 2 Visits during the measurement period.	**Definition:** The denominator defines the specific group of patients for inclusion in a specific performance measure based on specific criteria (e.g., patient's age, diagnosis, prior MI). In some cases, the denominator may be I dentical to the initial patient population.	**Definition:** The numerator defines the group of patients in the denominator for whom a process or outcome of care occurs (e.g., flu vaccine received).	**Definition:** Denominator exceptions are the valid reasons why patients who are included in the denominator population did not receive a process or outcome of care (described in the numerator). Patients may have Denominator Exceptions for medical reasons (e.g., patient has an egg allergy so they did not receive flu vaccine); patient reasons (e.g., patient declined flu vaccine); or system reasons (e.g., patient did not receive flu Vaccine due to vaccine shortage). These cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported. This group of patients constitutes the Denominator Exception reporting population – patients for whom the numerator was not achieved and a there is a valid Denominator Exception.
Find the patients who meet the Initial Patient Population criteria (IPP)	Find the patients who qualify for the denominator (D): ○ From the patients within the Patient Population criteria (IPP) select those people who meet Denominator selection criteria. (In some cases the IPP and D are identical).	Find the patients who qualify for the Numerator (N): ○ From the patients within the Denominator (D) criteria, select those people who meet Numerator selection criteria. ○ Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator	From the patients who did not meet the Numerator criteria, determine if the patient meets any criteria for the Denominator Exception (E1 + E2+E3). If they meet any criteria, they should be removed from the Denominator for performance calculation. As a point of reference, these cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported.

AMA-PCPI Level I EHR Specification
Chronic Stable Coronary Artery Disease
Beta Bocker Therapy--Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)- (CAD-7)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	411	POST MI SYNDROME
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	411.1	INTERMED CORONARY SYND
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	411.81	ACUTE COR OCCLSN W/O MI
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I9	411.89	AC ISCHEMIC HRT DIS NEC
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I9	413	ANGINA DECUBITUS
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	413.1	PRINZMETAL ANGINA
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	413.9	ANGINA PECTORIS NEC/NOS
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	414.00	COR ATH UNSPEC VESSEL NTV/GRAFT
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	414.01	COR ATH NATVE VESSEL
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I9	414.02	COR ATH ATLG VN BPS GRAFT
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I9	414.03	COR ATH NONATLG BLG GRAFT
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	414.04	COR ATH MAMMARY ART BPS GRAFT
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	414.05	COR ATH BPS GRAFT NOS
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	414.06	COR ATH NATV ART TP HRT
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	414.07	COR ATH BPS GRAFT TP HRT
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I9	414.8	CHR ISCHEMIC HRT DIS NEC
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I9	414.9	CHR ISCHEMIC HRT DIS NOS
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	V45.81	STATUS-POST AORTOCOR BPS GRAFT
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I9	V45.82	STATUS-POST PTCA
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I20.1	Angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I20.9	Angina pectoris, unspecified
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I24.0	Acute Coronary Thrombosis not resulting in myocardial infarction
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I24.1	Dressler's syndrome
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I24.8	Other forms of acute ischemic heart disease
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I24.9	Acute ischemic heart disease, unspecified
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris Atherosclerosis of native coronary artery of transplanted heart NOS
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris; Atherosclerosis of bypass graft of transplanted heart NOS
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.89	Other forms of chronic ischemic heart disease

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	I10	I25.9	Chronic ischemic heart disease, unspecified
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	Z95.1	Presence of aortocoronary bypass graft
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Problem/Condition	I10	Z95.5	Presence of coronary angioplasty implant and graft
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	10365005	right main coronary artery thrombosis
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	28248000	left anterior descending coronary artery thrombosis
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	29899005	coronary artery embolism
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	50570003	aneurysm of coronary vessels
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	53741008	coronary arteriosclerosis
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	63739005	coronary occlusion
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	67682002	coronary artery atheroma
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	74218008	coronary artery arising from main pulmonary artery
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	75398000	anomalous origin of coronary artery
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	87343002	prinzmetal angina
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	92517006	calcific coronary arteriosclerosis
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	123641001	left coronary artery occlusion
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	123642008	right coronary artery occlusion
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	194842008	single coronary vessel disease
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	194843003	double coronary vessel disease
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	233817007	triple vessel disease of the heart
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	233970002	coronary artery stenosis
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	315348000	asymptomatic coronary heart disease
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	371803003	multi vessel coronary artery disease
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	371804009	left main coronary artery disease
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	371805005	significant coronary bypass graft disease
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	398274000	coronary artery thrombosis
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	408546009	coronary artery bypass graft occlusion
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	420006002	obliterative coronary artery disease
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	421327009	coronary artery stent thrombosis
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	427919004	coronary arteriosclerosis due to radiation
000274	CAD	7	IPP	Coronary Artery Disease No MI	Diagnosis/Condition/Problem	SNM	429245005	recurrent coronary arteriosclerosis after percutaneous transluminal coronary angioplasty
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33140	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33510	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33511	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33512	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33513	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33514	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33516	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33517	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33518	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33519	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33521	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33522	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33523	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33533	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33534	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33535	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	33536	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	92980	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	92981	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	92982	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	92984	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	92995	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	CPT	92996	
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	3546002	aortocoronary artery bypass graft with saphenous vein graft
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	10326007	coronary artery bypass with autogenous graft, three grafts
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	15256002	transmyocardial revascularization by laser technique
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	30670000	anastomosis of thoracic artery to coronary artery, double
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	39202005	coronary artery bypass with autogenous graft, four grafts
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	39724006	anastomosis of internal mammary artery to coronary artery, double vessel
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	48431000	anastomosis of thoracic artery to coronary artery, single
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	74371005	coronary artery bypass with autogenous graft, two grafts
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	81266008	heart revascularization
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	82247006	coronary artery bypass with autogenous graft, five grafts
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	90205004	cardiac revascularization with bypass anastomosis
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	119564002	internal mammary-coronary artery bypass graft
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	119565001	coronary artery bypass graft, anastomosis of artery of thorax to coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	174911007	revascularization of wall of heart
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175007008	saphenous vein graft replacement of one coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175008003	saphenous vein graft replacement of two coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175009006	saphenous vein graft replacement of three coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175011002	saphenous vein graft replacement of four or more coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175012009	other specified saphenous vein graft replacement of coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175021005	allograft bypass of coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175022003	allograft replacement of one coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175024002	allograft replacement of two coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175025001	allograft replacement of three coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175026000	allograft replacement of four or more coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175036008	revision of bypass for coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175037004	revision of bypass for one coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175038009	revision of bypass for two coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175039001	revision of bypass for three coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175040004	revision of bypass for four or more coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175041000	revision of connection of thoracic artery to coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175045009	connection of mammary artery to coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175047001	double implantation of mammary arteries into coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175048006	single anastomosis of mammary artery to left anterior descending coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175050003	single implantation of mammary artery into coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175053001	connection of other thoracic artery to coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	175058005	other specified connection of other thoracic artery to coronary artery
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	232717009	coronary artery bypass graft
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	232719007	coronary artery bypass graft x 1
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	232720001	coronary artery bypass grafts x 2
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	232721002	coronary artery bypass grafts x 3
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	232722009	coronary artery bypass grafts x 4

AMA-PCPI Level I EHR Specification
Chronic Stable Coronary Artery Disease
Beta Bocker Therapy--Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)- (CAD-7)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	232723004	coronary artery bypass grafts x 5
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	232724005	coronary artery bypass grafts greater than 5
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	265481001	double anastomosis of mammary arteries to coronary arteries
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	275215001	LIMA single anastomosis
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	275216000	RIMA single anastomosis
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	275227003	myocardial revascularization
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	275252001	LIMA sequential anastomosis
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	275253006	RIMA sequential anastomosis
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	287277008	indirect heart revascularization
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	309814006	aortocoronary bypass grafting
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	359597003	single internal mammary-coronary artery bypass
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	359601003	coronary artery bypass with autogenous graft of internal mammary artery, single graft
000023	CAD	7	IPP	Cardiac Surgery	Procedure	SNM	414088005	emergency CABG
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99201	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99202	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99203	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99204	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99205	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99212	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99213	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99214	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99215	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99241	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99242	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99243	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99244	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99245	
000002	CAD	7	IPP	Encounter Nursing Facility	Encounter	CPT	99304	
000002	CAD	7	IPP	Encounter Nursing Facility	Encounter	CPT	99305	
000002	CAD	7	IPP	Encounter Nursing Facility	Encounter	CPT	99306	
000002	CAD	7	IPP	Encounter Nursing Facility	Encounter	CPT	99307	
000002	CAD	7	IPP	Encounter Nursing Facility	Encounter	CPT	99308	
000002	CAD	7	IPP	Encounter Nursing Facility	Encounter	CPT	99309	
000002	CAD	7	IPP	Encounter Nursing Facility	Encounter	CPT	99310	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99324	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99325	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99326	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99327	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99328	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99334	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99335	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99336	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99337	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99341	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99342	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99343	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99344	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99345	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99347	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99348	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99349	
000002	CAD	7	IPP	Encounter Outpatient	Encounter	CPT	99350	
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.00	AMI ANTEROLATERAL,UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.01	AMI ANTEROLATERAL, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.02	AMI ANTEROLATERAL,SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.1	AMI ANTERIOR WALL,UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.11	AMI ANTERIOR WALL, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.12	AMI ANTERIOR WALL,SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.2	AMI INFEROLATERAL,UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.21	AMI INFEROLATERAL, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.22	AMI INFEROLATERAL,SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.3	AMI INFEROPOST, UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.31	AMI INFEROPOST, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.32	AMI INFEROPOST, SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.4	AMI INFERIOR WALL,UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.41	AMI INFERIOR WALL, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.42	AMI INFERIOR WALL,SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.5	AMI LATERAL NEC, UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.51	AMI LATERAL NEC, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.52	AMI LATERAL NEC, SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.6	TRUE POST INFARCT,UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.61	TRUE POST INFARCT, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.62	TRUE POST INFARCT,SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.7	SUBENDO INFARCT, UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.71	SUBENDO INFARCT, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.72	SUBENDO INFARCT, SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.8	AMI OTHER SPEC SITE,UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.81	AMI OTHER SPEC SITE,INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.82	AMI OTHER SPEC SITE,SUBSEQ
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.9	AMI NOS,UNSPEC
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.91	AMI NOS, INITIAL
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	410.92	AMI NOS, SUBSEQUENT
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I9	412	OLD MYOCARDIAL INFARCT
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery/ST elevation (STEMI) myocardial infarction involving diagonal coronary artery
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall (Acute transmural myocardial infarction of anterior wall)
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.11	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Inferoposterior transmural (Q wave) infarction (acute)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Acute transmural myocardial infarction of inferior wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.21	ST elevation (STEMI) myocardial infarction involving left circulflex coronary artery
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.29	ST elevation (STEMI) myocardial infarction involving other sites Acute transmural myocardial infarction of other sites
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.3	ST elevation (STEMI) myocardial infarction of unspecified site Acute transmural myocardial infarction of unspecified site Myocardial infarction (acute) NOS
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I21.4	Non-ST elevation (NSTEMI) myocardial infarction Acute subendocardial myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall/ Subsequent acute transmural myocardial infarction of anterior wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall Subsequent acute transmural myocardial infarction of inferior wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction Subsequent acute subendocardial myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites Subsequent acute transmural myocardial infarction of other sites
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site Subsequent acute myocardial infarction of unspecified site
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	I10	I25.2	Old myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	1755008	old myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	10273003	acute infarction of papillary muscle
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	15990001	acute myocardial infarction of posterolateral wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	22298006	myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	30277009	acute myocardial infarction with rupture of ventricle
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	32574007	past myocardial infarction diagnosed on ECG AND/OR other special investigation, but currently presenting no symptoms
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	42531007	microinfarct of heart
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	52035003	acute anteroapical myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	54329005	acute myocardial infarction of anterior wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	57054005	acute myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	58612006	acute myocardial infarction of lateral wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	62695002	acute anteroseptal myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	65547006	acute myocardial infarction of inferolateral wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	70211005	acute myocardial infarction of anterolateral wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	70422006	acute subendocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	73795002	acute myocardial infarction of inferior wall
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	79009004	acute myocardial infarction of septum
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	129574000	postoperative myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	161502000	H/O: myocardial infarct at less than 60
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	161503005	H/O: myocardial infarct at greater than 60
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	194798004	acute anteroapical infarction

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	194802003	true posterior myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	194809007	acute myocardial infarction of atrium
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	194856005	subsequent myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	233835003	acute widespread myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	233838001	acute posterior myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	233839009	old anterior myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	233840006	old inferior myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	233841005	old lateral myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	233842003	old posterior myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	233843008	silent myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	275905002	H/O: myocardial problem
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	304914007	acute Q wave myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	307140009	acute non-Q wave infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	308065005	H/O: Myocardial infarction in last year
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	314207007	non-Q wave myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	371068009	myocardial infarction with complication
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	394710008	first myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	399211009	history of - myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	401303003	acute ST segment elevation myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	401314000	acute non-ST segment elevation myocardial infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	418044006	myocardial infarction in recovery phase
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	428196007	mixed myocardial ischemia and infarction
000273	CAD	7	D	Myocardial Infarction	Diagnosis/Problem/Condition	SNM	428752002	recent myocardial infarction
000003	CAD	7	D	Ejection Fraction	Diagnostic Study	SNM	70822001	CARDIAC EJECTION FRACTION
000003	CAD	7	D	Ejection Fraction	Diagnostic Study	SNM	250908004	LEFT VENTRICULAR EJECTION FRACTION
000003	CAD	7	D	Ejection Fraction	Diagnostic Study	SNM	250907009	LEFT VENTRICULAR FUNCTION
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	78454	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	78468	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	78472	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	78473	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	78481	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	78483	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	78494	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	78496	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93303	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93304	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93306	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93307	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93308	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93312	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93313	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93314	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93315	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93316	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93317	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93350	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93351	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93352	
000004	CAD	7	D	LVF Assmt	Diagnostic Study	CPT	93543	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000248	CAD	7	D	LVSD : Moderate or Severe Dysfunction	Diagnostic Study	SNM	10189741000046100	Moderate left ventricular systolic dysfunction (disorder)
000248	CAD	7	D	LVSD : Moderate or Severe Dysfunction	Diagnostic Study	SNM	10189751000046100	Severe left ventricular systolic dysfunction (disorder)
000244	CAD	7	D	LVSD	Diagnosis/Condition/Problem	SNM	134401001	Left Ventricular Systolic Dysfunction
000247	CAD	7	D	Severity Status	Result	SNM	6736007	Moderate (severity)
000247	CAD	7	D	Severity Status	Result	SNM	24484000	Severe (Severity)
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	104302	Acebutolol 200 MG Oral Capsule [Sectral]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	141882	Betaxolol 20 MG Oral Tablet [Kerlone]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	150750	Atenolol 25 MG Oral Tablet [Tenormin]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	152414	Atenolol 50 MG Oral Tablet [Tenormin]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	197296	Acebutolol 200 MG Oral Capsule
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	197297	Acebutolol 400 MG Oral Capsule
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	197379	Atenolol 100 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	213727	Carteolol 2.5 MG Oral Tablet [Cartrol]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	213728	Carteolol 5 MG Oral Tablet [Cartrol]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	197380	Atenolol 25 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	197381	Atenolol 50 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	197382	Atenolol 100 MG / Chlorthalidone 25 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	197383	Atenolol 50 MG / Chlorthalidone 25 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198004	Nadolol 120 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198005	Nadolol 160 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198006	Nadolol 20 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198007	Nadolol 40 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198008	Nadolol 80 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198104	Pindolol 10 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198105	Pindolol 5 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198284	Timolol 10 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198285	Timolol 20 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	198286	Timolol 5 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	200857	Pindolol 5 MG Oral Tablet [Visken]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	201322	Atenolol 100 MG Oral Tablet [Tenormin]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	201327	Atenolol 0.5 MG/ML Injectable Solution [Tenormin]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	201337	Nadolol 40 MG Oral Tablet [Corgard]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	201338	Nadolol 80 MG Oral Tablet [Corgard]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	201340	Timolol 10 MG Oral Tablet [Blocadren]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	206240	esmolol 10 MG/ML Injectable Solution [Brevibloc]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	206244	esmolol 250 MG/ML Injectable Solution [Brevibloc]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	206961	Nadolol 20 MG Oral Tablet [Corgard]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	206964	Nadolol 120 MG Oral Tablet [Corgard]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	206968	Nadolol 160 MG Oral Tablet [Corgard]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	207367	Penbutolol 20 MG Oral Tablet [Levatol]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	207851	Sotalol 80 MG Oral Tablet [Betapace]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	207852	Sotalol 160 MG Oral Tablet [Betapace]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	207861	Sotalol 240 MG Oral Tablet [Betapace]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	208003	Bendroflumethiazide 5 MG / Nadolol 40 MG Oral Tablet [Corzide 40/5]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	208029	Bendroflumethiazide 5 MG / Nadolol 80 MG Oral Tablet [Corzide 80/5]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	208140	Pindolol 10 MG Oral Tablet [Visken]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	208375	Acebutolol 400 MG Oral Capsule [Sectral]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	208575	Timolol 5 MG Oral Tablet [Blocadren]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	208576	Timolol 20 MG Oral Tablet [Blocadren]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	211773	Atenolol 50 MG Oral Tablet [Senormin]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	211810	Sotalol 120 MG Oral Tablet [Betapace]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	212388	carvedilol 6.25 MG Oral Tablet [Coreg]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	212389	carvedilol 12.5 MG Oral Tablet [Coreg]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	212390	carvedilol 25 MG Oral Tablet [Coreg]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	213731	Betaxolol 10 MG Oral Tablet [Kerlone]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	238246	esmolol 10 MG/ML Injectable Solution
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	260346	Sotalol 80 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	260348	Sotalol 160 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	260349	Sotalol 240 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	260693	Sotalol 120 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	261397	Betaxolol 10 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	261398	Betaxolol 20 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	351442	Sotalol 80 MG Oral Tablet [Sorine]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	351443	Sotalol 160 MG Oral Tablet [Sorine]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	351444	Sotalol 240 MG Oral Tablet [Sorine]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	351709	Sotalol 120 MG Oral Tablet [Sorine]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	404603	esmolol 20 MG/ML Injectable Solution [Brevibloc]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	491234	Hydrochlorothiazide 25 MG / Timolol 10 MG Oral Tablet [Timolide]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	686926	carvedilol 3.13 MG Oral Tablet [Coreg]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	746023	Atenolol 100 MG / Chlorthalidone 25 MG Oral Tablet [Tenoretic 100]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	746030	Atenolol 50 MG / Chlorthalidone 25 MG Oral Tablet [Tenoretic 50]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854901	Bisoprolol Fumarate 10 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854903	Bisoprolol Fumarate 10 MG Oral Tablet [Zebeta]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854905	Bisoprolol Fumarate 5 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854907	Bisoprolol Fumarate 5 MG Oral Tablet [Zebeta]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854908	Bisoprolol Fumarate 10 MG / Hydrochlorothiazide 6.25 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854910	Bisoprolol Fumarate 10 MG / Hydrochlorothiazide 6.25 MG Oral Tablet [Ziac 10/6.25]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854916	Bisoprolol Fumarate 2.5 MG / Hydrochlorothiazide 6.25 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854918	Bisoprolol Fumarate 2.5 MG / Hydrochlorothiazide 6.25 MG Oral Tablet [Ziac 2.5/6.25]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854919	Bisoprolol Fumarate 5 MG / Hydrochlorothiazide 6.25 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	854921	Bisoprolol Fumarate 5 MG / Hydrochlorothiazide 6.25 MG Oral Tablet [Ziac 5/6.25]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856422	Hydrochlorothiazide 25 MG / Propranolol Hydrochloride 40 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856426	Hydrochlorothiazide 25 MG / Propranolol Hydrochloride 40 MG Oral Tablet [Inderide 40/25]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856429	Hydrochlorothiazide 25 MG / Propranolol Hydrochloride 80 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856433	Hydrochlorothiazide 25 MG / Propranolol Hydrochloride 80 MG Oral Tablet [Inderide 80/25]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856443	Propranolol Hydrochloride 1 MG/ML Injectable Solution
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856445	Propranolol Hydrochloride 1 MG/ML Injectable Solution [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856448	Propranolol Hydrochloride 10 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856450	Propranolol Hydrochloride 10 MG Oral Tablet [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856457	Propranolol Hydrochloride 20 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856460	24 HR Propranolol Hydrochloride 120 MG Extended Release Capsule
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856462	24 HR Propranolol Hydrochloride 120 MG Extended Release Capsule [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856471	24 HR Propranolol Hydrochloride 120 MG Extended Release Capsule [InnoPran]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856481	24 HR Propranolol Hydrochloride 160 MG Extended Release Capsule
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856483	24 HR Propranolol Hydrochloride 160 MG Extended Release Capsule [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856508	Propranolol Hydrochloride 20 MG Oral Tablet [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856519	Propranolol Hydrochloride 40 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856521	Propranolol Hydrochloride 40 MG Oral Tablet [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856535	24 HR Propranolol Hydrochloride 60 MG Extended Release Capsule
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856537	24 HR Propranolol Hydrochloride 60 MG Extended Release Capsule [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856556	Propranolol Hydrochloride 60 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856557	Propranolol Hydrochloride 60 MG Oral Tablet [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856569	24 HR Propranolol Hydrochloride 80 MG Extended Release Capsule
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856571	24 HR Propranolol Hydrochloride 80 MG Extended Release Capsule [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856576	24 HR Propranolol Hydrochloride 80 MG Extended Release Capsule [InnoPran]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856578	Propranolol Hydrochloride 80 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856579	Propranolol Hydrochloride 80 MG Oral Tablet [Inderal]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856586	24 HR Hydrochlorothiazide 50 MG / Propranolol Hydrochloride 120 MG Extended Release Capsule [Inderide 120/50]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856591	24 HR Hydrochlorothiazide 50 MG / Propranolol Hydrochloride 160 MG Extended Release Capsule [Inderide 160/50]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856596	24 HR Hydrochlorothiazide 50 MG / Propranolol Hydrochloride 80 MG Extended Release Capsule [Inderide 80/50]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856724	Propranolol Hydrochloride 4 MG/ML Oral Solution
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856733	Propranolol Hydrochloride 8 MG/ML Oral Solution
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856737	Propranolol Hydrochloride 80 MG/ML Oral Solution
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	856739	Propranolol Hydrochloride 90 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866414	24 HR Metoprolol Tartrate 100 MG Extended Release Tablet [Toprol]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866421	24 HR Metoprolol Tartrate 200 MG Extended Release Tablet [Toprol]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866429	24 HR Metoprolol Tartrate 25 MG Extended Release Tablet [Toprol]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866438	24 HR Metoprolol Tartrate 50 MG Extended Release Tablet [Toprol]

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866479	Hydrochlorothiazide 25 MG / Metoprolol Tartrate 100 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866482	Hydrochlorothiazide 25 MG / Metoprolol Tartrate 50 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866491	Hydrochlorothiazide 50 MG / Metoprolol Tartrate 100 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866498	Hydrochlorothiazide 25 MG / Metoprolol Tartrate 100 MG Oral Tablet [Lopressor HCT 100/25]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866502	Hydrochlorothiazide 25 MG / Metoprolol Tartrate 50 MG Oral Tablet [Lopressor HCT 50/25]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866506	Hydrochlorothiazide 50 MG / Metoprolol Tartrate 100 MG Oral Tablet [Lopressor HCT 100/50]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866508	Metoprolol Tartrate 1 MG/ML Injectable Solution
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866510	Metoprolol Tartrate 1 MG/ML Injectable Solution [Lopressor]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866511	Metoprolol Tartrate 100 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866513	Metoprolol Tartrate 100 MG Oral Tablet [Lopressor]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866514	Metoprolol Tartrate 50 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866516	Metoprolol Tartrate 50 MG Oral Tablet [Lopressor]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	866924	Metoprolol Tartrate 25 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896758	Labetalol hydrochloride 100 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896760	Labetalol hydrochloride 100 MG Oral Tablet [Normodyne]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896762	Labetalol hydrochloride 200 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896764	Labetalol hydrochloride 200 MG Oral Tablet [Normodyne]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896766	Labetalol hydrochloride 300 MG Oral Tablet
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896768	Labetalol hydrochloride 300 MG Oral Tablet [Normodyne]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896771	Labetalol hydrochloride 5 MG/ML Injectable Solution
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896773	Labetalol hydrochloride 5 MG/ML Injectable Solution [Normodyne]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896775	Labetalol hydrochloride 5 MG/ML Injectable Solution [Trandate]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896777	Labetalol hydrochloride 100 MG Oral Tablet [Trandate]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896781	Labetalol hydrochloride 200 MG Oral Tablet [Trandate]
000011	CAD	7	N	Beta Blocker Therapy	Medication	RxNorm	896783	Labetalol hydrochloride 300 MG Oral Tablet [Trandate]
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	200031	carvedilol 6.25 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	200032	carvedilol 12.5 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	200033	carvedilol 25 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	212388	Coreg 6.25 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	212389	Coreg 12.5 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	212390	Coreg 25 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	686924	carvedilol 3.125 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	686926	Coreg 3.125 Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854901	Bisoprolol Fumarate 10 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854903	Zebeta 10 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854905	Bisoprolol Fumarate 5 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854907	Zebeta 5 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854908	bisoprolol fumarate 10 MG / HCTZ 6.25 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854910	Ziac 10/6.25 Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854916	bisoprolol fumarate 2.5 MG / HCTZ 6.25 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854918	Ziac 2.5/6.25 Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854919	bisoprolol fumarate 5 MG / HCTZ 6.25 MG Oral Tablet

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	854921	Ziac 5/6.25 Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860510	carvedilol phosphate 10 MG 24 HR Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860512	24 HR Coreg 10 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860513	carvedilol phosphate 10 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860514	Coreg 10 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860516	carvedilol phosphate 20 MG 24 HR Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860518	24 HR Coreg 20 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860519	carvedilol phosphate 20 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860520	Coreg 20 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860522	carvedilol phosphate 40 MG 24 HR Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860524	24 HR Coreg 40 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860525	carvedilol phosphate 40 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860526	Coreg 40 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860532	carvedilol phosphate 80 MG 24 HR Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860534	24 HR Coreg 80 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860535	carvedilol phosphate 80 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	860536	Coreg 80 MG Extended Release Capsule
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	865154	Bisoprolol Fumarate 1.25 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	865155	Bisoprolol Fumarate 2.5 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	865157	Bisoprolol Fumarate 3.75 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	865159	Bisoprolol Fumarate 7.5 MG Oral Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	866412	metoprolol tartrate 100 MG (as metoprolol succinate 95 MG) 24 HR Extended Release Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	866414	24 HR Toprol XL 100 MG Extended Release Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	866419	metoprolol tartrate 200 MG (as metoprolol succinate 190 MG) 24 HR Extended Release Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	866421	24 HR Toprol XL 200 MG Extended Release Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	866436	metoprolol tartrate 50 MG (as metoprolol succinate 47.5 MG) 24 HR Extended Release Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	866452	hydrochlorothiazide 12.5 MG / metoprolol tartrate 100 MG (as metoprolol succinate 95 MG) 24 HR Extended Release Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	866455	Dutoprol 100/12.5 MG 24 HR Extended Release Tablet
000211	CAD	7	N	Beta Blocker Therapy for LVSD	Medication	RxNorm	866846	HCTZ 25 MG / metoprolol tartrate 200 MG (as metroprolol succinate 190 MG) 24 HR Extended Release Tablet
000113	CAD	7	E	Heart Rate	Physical Exam	SNM	364075005	HEART RATE
000095	CAD	7	E	Cardiac Pacer in Situ	Diagnosis/Problem/Condition	I9	V45.01	STATUS-POST PACEMAKER
000095	CAD	7	E	Cardiac Pacer in Situ	Diagnosis/Problem/Condition	I10	Z95.0	Presence of cardiac pacemaker
000095	CAD	7	E	Cardiac Pacer in Situ	Device	SNM	14106009	cardiac pacemaker
000095	CAD	7	E	Cardiac Pacer in Situ	Device	SNM	56961003	cardiac transvenous pacemaker
000095	CAD	7	E	Cardiac Pacer in Situ	Device	SNM	360127006	intravenous cardiac pacemaker system
000095	CAD	7	E	Cardiac Pacer in Situ	Device	SNM	360128001	intravenous triggered cardiac pacemaker system
000095	CAD	7	E	Cardiac Pacer in Situ	Device	SNM	424921004	permanent cardiac pacemaker, device
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	I9	426.0	AV BLOCK COMPLETE
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	I9	426.12	AV BLOCK-MOBITZ II
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	I9	426.13	AV BLOCK-2ND DEGREE NOS
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	I10	I44.2	Atrioventricular block, complete
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	I10	I44.1	Atrioventricular block, second degree

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	2374000	Monofascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	4554005	intraventricular conduction defect (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	4973001	left bundle branch hemiblock (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	6180003	complete left bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	6374002	bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	9651007	long QT syndrome (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	13620007	Stokes-Adams-Morgagni syndrome (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	20143001	bilateral bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	20852007	Romano-Ward syndrome (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	27885002	complete atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	28189009	Mobitz type II atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	30667004	right bundle branch block AND left anterior fascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	32425009	right bundle branch block, anterior fascicular block AND posterior fascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	32758004	right bundle branch block with left bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	37760005	left anterior fascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	41863008	right bundle branch block, anterior fascicular block AND incomplete posterior fascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	43906007	right bundle branch block AND incomplete left bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	44103008	postoperative sinoatrial disease (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	46319007	right bundle branch block AND left posterior fascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	46619002	congenital heart block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	46935006	Stokes-Adams syndrome (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	50799005	atrioventricular dissociation (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	54016002	Mobitz type I incomplete atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	59118001	right bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	62026008	left posterior fascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	63467002	left bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	64872007	congenital incomplete atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	66568003	right bundle branch block, posterior fascicular block AND incomplete anterior fascicular block
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	71792006	nodal rhythm disorder (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	73459006	right branch block, incomplete anterior fascicular block AND incomplete posterior fascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	74021003	Bifascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	76887001	anterior fascicular block, posterior fascicular block AND incomplete right bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	77221000	incomplete atrioventricular block with atrioventricular response (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	82226007	diffuse intraventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	82580003	congenital complete atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	86014007	trifascicular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	93130009	Lenegre's disease (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	129575004	pacemaker twiddler's syndrome (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	195039008	partial atrioventricular block (disorder)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	195042002	second degree atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	195046004	left main stem bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	204383001	congenital complete atrioventricular heart block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	204384007	congenital incomplete atrioventricular heart block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	233917008	atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	233918003	postoperative complete heart block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	233919006	familial isolated complete right bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	251114004	intermittent second degree atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	251120003	incomplete left bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	251123001	complete right bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	251124007	incomplete right bundle branch block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	251125008	minor intraventricular conduction defect (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	251152003	marked sinus arrhythmia (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	270492004	first degree atrioventricular block (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	276513001	neonatal dysrhythmia (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	283645003	lev's syndrome (disorder)
000094	CAD	7	E	Atrioventricular Block	Diagnosis/Condition/Problem	SNM	302944009	congenital complete heart block (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Problem/Condition	I9	427.81	SINOATRIAL NODE DYSFUNCT
000209	CAD	7	E	Arrhythmia	Diagnosis/Problem/Condition	I9	427.89	CARDIAC DYSRHYTHMIAS NEC
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	I10	I49.5	Tachybrady syndrome
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	I10	I49.8	Other specified cardiac dysrhythmias
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	184004	withdrawal arrhythmia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	10164001	parasystole (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	10626002	multifocal PVCs (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	11157007	ventricular bigeminy (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	11849007	atrioventricular junctional rhythm (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	13640000	fusion beats (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	17338001	ventricular premature beats (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	17366009	atrial arrhythmia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	17869006	anomalous atrioventricular excitation (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	26950008	chronic ectopic atrial tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	27337007	unifocal PVCs (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	29320008	ectopic rhythm (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	29894000	vagal autonomic bradycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	33413000	ectopic beats (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	36083008	SICK SINUS SYNDROME
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	38274001	interpolated PVCs (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	39260000	nonparoxysmal AV nodal tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	39357005	paroxysmal atrial tachycardia with block (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	40593004	fibrillation (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	44602002	persistent sinus bradycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	44808001	conduction disorder of the heart (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	47830009	junctional escape beats (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	49044005	severe sinus bradycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	49710005	sinus bradycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	49982000	multifocal atrial tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	55475008	Lown-Ganong-Levine syndrome (disorder)

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000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	59272004	ventricular parasystole (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	60423000	sinus node dysfunction (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	61277005	accelerated idioventricular rhythm (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	63232000	multifocal premature beats (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	63593006	supraventricular premature beats (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	69730002	idiojunctional tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	71908006	ventricular fibrillation (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	72654001	supraventricular arrhythmia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	74390002	Wolff-Parkinson-White pattern (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	74615001	tachycardia-bradycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	75532003	ventricular escape beat (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	81681009	junctional premature beats (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	81898007	ventricular escape rhythm (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	88412007	atrio-ventricular node arrhythmia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	195060002	ventricular pre-excitation (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	195069001	paroxysmal atrial tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	195071001	paroxysmal junctional tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	195072008	paroxysmal nodal tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	195083004	ventricular fibrillation and flutter (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233891009	sinoatrial node tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233892002	ectopic atrial tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233893007	re-entrant atrial tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233894001	incessant atrial tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233895000	ectopic atrioventricular node tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233904005	permanent junctional reciprocating tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233915000	paroxysmal familial ventricular fibrillation (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233922008	concealed accessory pathway (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	233923003	unidirectional retrograde accessory pathway (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	234172002	electromechanical dissociation (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251161003	slow ventricular response (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251162005	atrio-ventricular-junctional (nodal) bradycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251163000	atrio-ventricular junctional (nodal) arrest (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251164006	junctional premature complex (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251164006	junctional premature complex (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251165007	atrioventricular junctional (nodal) tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251166008	atrioventricular nodal re-entry tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251167004	aberrant premature complexes (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251168009	supraventricular bigeminy (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251170000	blocked premature atrial contraction (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251172008	run of atrial premature complexes (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251173003	atrial bigeminy (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251174009	atrial trigeminy (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251175005	ventricular premature complex (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251176006	multiple premature ventricular complexes (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251177002	run of ventricular premature complexes (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251178007	ventricular interpolated complexes (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251179004	multiple ventricular interpolated complexes

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251180001	ventricular trigeminy (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251181002	ventricular quadrigeminy (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251182009	paired ventricular premature complexes (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251186007	ventricular escape complex (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251187003	atrial escape complex (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	251188008	atrial parasystole (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	276796006	atrial tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	284470004	premature atrial contraction (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	287057009	atrial premature complex (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	309809007	electromechanical dissociation with successful resuscitation (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	406461004	ectopic atrial beats (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	418341009	atrioventricular conduction disorder (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	418818005	brugada syndrome (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	419752005	sinoatrial nodal reentrant tachycardia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	421869004	bradyarrhythmia (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	422348008	Andersen Tawil syndrome (disorder)
000209	CAD	7	E	Arrhythmia	Diagnosis/Condition/Problem	SNM	429243003	sustained ventricular fibrillation (disorder)
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.00	EXTRINSIC ASTHMA UNSPEC
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.01	EXTRINSIC ASTHMA W STATUS ASTH
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.02	EXTRINSIC ASTHMA W (AC) EXAC
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.10	INTRINSIC ASTHMA UNSPEC
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.11	INTRINSIC ASTHMA W STATUS ASTH
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.12	INTRINSIC ASTHMA W (AC) EXAC
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.20	CHR OBST ASTHMA UNSPEC
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.21	CHR OBST ASTHMA W STATUS ASTH
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.22	CHR OBST ASTHMA W (AC) EXAC
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.81	EXERCSE IND BRONCHOSPASM
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.82	COUGH VARIANT ASTHMA
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.90	ASTHMA NOS
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.91	ASTHMA NOS W STATUS ASTH
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I9	493.92	ASTHMA NOS W (AC) EXAC
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45	Asthma
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.22	Mild intermittent asthma with status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.32	Mild persistent asthma with status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.52	Severe persistent with status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.42	Moderate persistent with status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.90	Unspecified asthma
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.901	Unspecified asthma with (acute) exacerbation
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.902	Unspecified asthma with status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.990	Exercise induced bronchospasm
000209	CAD	7	E	Asthma	Diagnosis/Problem/Condition	I10	J45.991	Cough variant asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	11641008	millers' asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	12428000	intrinsic asthma without status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	13151001	flax-dressers' disease
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	30352005	allergic-infective asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	31387002	exercise-induced asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	55570000	asthma without status asthmaticus

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	56968009	wood asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	57546000	asthma with status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	59327009	intrinsic asthma with status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	59786004	weavers' cough
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	63088003	extrinsic asthma without status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	67415000	hay asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	85761009	byssinosis
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	91340006	extrinsic asthma with status asthmaticus
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	92807009	chemical-induced asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	93432008	drug-induced asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	195949008	chronic asthmatic bronchitis
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	195967001	asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	195977004	mixed asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	195979001	asthma unspecified
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	196013003	pneumopathy due to inhalation of other dust
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	225057002	brittle asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	233672007	byssinosis grade 3
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	233678006	childhood asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	233679003	late onset asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	233681001	extrinsic asthma with asthma attack
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	233683003	hay fever with asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	233685005	intrinsic asthma with asthma attack
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	233688007	sulfite-induced asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	266361008	intrinsic asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	266364000	asthma attack
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	281239006	exacerbation of asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	304527002	acute asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	370218001	mild asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	370219009	moderate asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	370220003	occasional asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	370221004	severe asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	389145006	allergic asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	405944004	asthmatic bronchitis
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	407674008	aspirin-induced asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	409663006	cough variant asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	423889005	Non-IgE mediated allergic asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	424199006	substance induced asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	424643009	igE-mediated allergic asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	425969006	exacerbation of intermittent asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	426656000	severe persistent asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	426979002	mild persistent asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	427295004	moderate persistent asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	427354000	exacerbation of persistent asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	427603009	intermittent asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	427679007	mild intermittent asthma
000209	CAD	7	E	Asthma	Diagnosis/Condition/Problem	SNM	442025000	acute exacerbation of chronic asthmatic bronchitis
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	I9	427.89	Other specified cardiac dysrhythmias, sinoatrial, sinus, vagal

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	I9	427.81	Sinoatrial node dysfunction, chronic, persisten, severe, with tachycardia or paroxysmal tachyarrhythmia
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	I9	337.09	Idiopathic peripheral autonomic neuropathy
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	I10	G90.09	Other indiopathic peripheral autonomic neuropathy
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	I10	R00.1	Bradycardia unspecified, sinoatrial, sinus, vagal
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	29894000	vagal autonomic bradycardia (disorder)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	42177007	BRADYCARDIA - PULSE SLOW
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	44273001	reflex bradycardia (finding)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	44602002	PERSISTENT SINUS BRADYCARDIA
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	47101004	cardiotachometry
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	48867003	SLOW HEART BEAT - BRADYCARDIA
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	49044005	SEVERE SINUS BRADYCARDIA
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	49710005	SINUS BRADYCARDIA
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	49710005	sinus bradycardia (disorder)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	162988008	on examination - pulse rate - bradycardia (finding)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	251162005	atrio-ventricular-junctional (nodal) bradycardia (disorder)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	278085001	baseline bradycardia (finding)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	309746001	[D]Sinus bradycardia (situation)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	397841007	drug-induced bradycardia (disorder)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	413341007	neonatal bradycardia (disorder)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	426177001	electrocardiogram: sinus bradycardia (finding)
000209	CAD	7	E	Bradycardia	Diagnosis/Condition/Problem	SNM	426627000	electrocardiogram: bradycardia (finding)
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I9	458.0	ORTHOSTATIC HYPOTENSION
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I9	458.1	CHRONIC HYPOTENSION
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I9	458.21	HEMODIALYSIS HYPOTENSION
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I9	458.29	IATROGENC HYPOTENSION
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I9	458.8	HYPOTENSION NEC
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I9	458.9	HYPOTENSION NOS
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I10	I95.1	Orthostatic hypotension
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I10	I95.3	Hypotension of hemodialysis
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I10	I95.89	Other hypotension
000209	CAD	7	E	Hypotension	Diagnosis/Problem/Condition	I10	I95.9	Hypotension, unspecified
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	45007003	low blood pressure (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	61933008	hyperadrenergic postural hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	70247006	hypoadrenergic postural hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	75181005	chronic orthostatic hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	77545000	chronic hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	88887003	maternal hypotension syndrome (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	163022004	on examination - blood pressure reading very low (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	163024003	on examination - blood pressure borderline low (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	195506001	idiopathic hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	200113008	maternal hypotension syndrome with antenatal problem (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	200114002	maternal hypotension syndrome with postnatal problem (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	230664009	sympathotonic orthostatic hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	234171009	drug-induced hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	271870002	low blood pressure reading (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	276519002	neonatal hypotension (disorder)

AMA-PCPI Level I EHR Specification
Chronic Stable Coronary Artery Disease
Beta Bocker Therapy--Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)- (CAD-7)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	286963007	chronic hypotension - idiopathic (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	371073003	postural orthostatic tachycardia syndrome (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	408667000	hemodialysis-associated hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	408668005	iatrogenic hypotension (disorder)
000209	CAD	7	E	Hypotension	Diagnosis/Condition/Problem	SNM	429561008	exertional hypotension (disorder)
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	21745	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	21747	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	21703	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	21704	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	22855	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	21990	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	21738	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	22259	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	21815	
000160	CAD	7	E	Medical reason	Negation Rationale	HL7	22261	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	19729	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	21741	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	21746	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	21743	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	21710	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	21708	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	22851	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	14880	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	22260	
000174	CAD	7	E	Patient reason	Negation Rationale	HL7	15985	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22168	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22169	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22165	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22166	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22167	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21493	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19731	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19730	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19733	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19735	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19734	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19736	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21744	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22024	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22023	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21706	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21709	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21707	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21732	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21706	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21731	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21733	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21728	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21729	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21730	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21734	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22867	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21735	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22866	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22865	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21568	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	21408	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22907	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22909	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22911	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22913	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22912	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22858	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22857	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	22859	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19989	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19990	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19988	
000200	CAD	7	E	System Reason	Negation Rationale	HL7	19987	

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0071 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Acute Myocardial Infarction (AMI): Persistence of Beta-Blocker Treatment After a Heart Attack
De.2 **Brief description of measure***:* The percentage of patients age 35 years and older during the measurement year who were hospitalized and discharged alive July 1 of the year prior to the measurement year through June 30 of the measurement year with a diagnosis of acute myocardial infarction (AMI) and who received persistent beta-blocker treatment for six months after discharge.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Care coordination, Population health De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Getting better, Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** Proprietary measure A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y☐** **N☐**

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Leading cause of morbidity/mortality 1a.2 1a.3 **Summary of Evidence of High Impact:** Health Importance: This measure addresses the appropriate clinical management of a person who has experienced an AMI. The major outcomes achieved by the therapies targeted by this measure are reduced risk of mortality (in-hospital and post-hospital), reduced risk and severity of reinfarction (i.e., another heart attack) and preservation of left ventricular function. These outcomes are realized through a combination of strategies, including: • restoration of blood flow (i.e., reperfusion), which is essential for reducing the severity of damage to the heart muscle and is achieved through thrombolytic therapy (to prevent and dissolve blood clots) or percutaneous transluminal coronary angioplasty (PTCA) • the use of beta-blockers (to slow the heart rate, lower blood pressure and prevent irregular heartbeats) and ACE inhibitors (to lower blood pressure and prevent recurrences), which contribute to limiting the extent of damage to the heart muscle (reducing the probability of "pump failure") and preserving ventricular function. How beta-blockers affect subsequent outcomes for patients with an AMI is not well understood, although the observed effects are significant. Beta-blockers partially block the nerve impulses that stimulate the	**1a** C☐ P☐ M☐ N☐

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

heart muscle; they may reduce how hard the heart has to work to pump blood and also lower blood pressure. Beta-blockers also contribute to reduction in arrhythmias (irregular or loss of rhythm in the heart beat), and reduce ischemia (inadequate flow of blood to the heart).
Both short- and long-term use of beta-blockers reduce mortality after an AMI. A meta-analysis of 31 long-term trials (6–48 month use of beta-blockers after AMI) indicates a 23 percent reduction in the odds of death. An analysis of 51 short-term trials (up to 6 weeks after the onset of pain) indicates a 4 percent reduction in the odds of death (Freemantle, 1999). There is also indication that beta-blocker therapy can lead to a 22 percent relative risk reduction for hospital readmission during the first year (Bradford et al, 1999).
Even given the significant benefits of continued beta-blocker use, beta-blocker therapy continues to be underused, especially in high risk groups (ACC/AHA, 2004).

Outpatient utilization of beta-blocker therapy was assessed during the first year following hospital discharge for AMI. The study examined the proportion of patients who filled a prescription for a beta-blocker within 30 days after hospital discharge and the proportion who had a current prescription at 180 and 365 days post discharge. Of patients discharged on beta-blockers, 85% of survivors had filled a prescription by 30 days; 63% at 180 days, and 61% at 365 days were current users (Butler J, et al., 2002). There is significant long-term decline in use of prescribed therapy after hospital discharge for AMI. Quality improvement efforts in this area could have an impact due to the demonstrated survival benefit of continued beta-blocker therapy after heart attack.

In a recent national study of patients with a history of AMI (who had commercial health insurance and prescription drug benefits), only 45% of patients were adherent to beta-blockers in the first year after hospital discharge, with the biggest drop in adherence between 30 and 90 days (Kramer JM, et al., 2006). Sustained therapy with beta-blocker medication provides better survival outcomes.

Despite the benefit associated with the use of beta-blockers, studies looking at prescribing patterns have shown that fewer patients continue treatment past the initial prescription (Krumholz, 1998; Beta-Blocker Pooling Project Research Group, 1988; Phillips, 1996). In addition, long-term use of beta-blocker therapy continues to be underused, especially in high risk groups (ACC/AHA, 2004).

Financial Importance:
The cost of cardiovascular diseases and stroke in the United States for 2006 is estimated at $403.1 billion. This figure includes health expenditures (direct costs such as the cost of physicians and healthcare practitioners, hospital and nursing home services, medications, home health care and other medical durables) and lost productivity resulting from morbidity and mortality (indirect costs). By comparison, in 2004 the estimated cost of all cancers was $190 billion ($69 billion in direct costs, $17 billion in morbidity indirect costs and $104 billion in mortality indirect costs). (AHA, 2006)

AMI represents 18 percent of hospital discharges and 28 percent of deaths due to heart disease, so one might estimate that the costs associated with AMI might be in the range from about $39–$60 billion (NHLBI, 2000).

Increasing beta-blocker use to ideal levels was shown to be cost-effective compared to current utilization at a cost of $5000 per quality-adjusted life years (QALY) gained (Philips et al, 2000). Compared to current utilization, increasing adherence to current guidelines and extending eligibility to new patients with AMIs in 2000, over the next 20 years beta-blockers would save as many as:
- 4,000 lives
- 3,000 future AMIs

34,000 quality-adjusted years of life (Philips et al, 2000)

1a.4 Citations for Evidence of High Impact: Freemantle N, Cleland J, Young P, Mason J, Harrison J. ? Blockade after myocardial infarction: systematic review and meta regression analysis. BMJ 1999;318:1730-1737.

Bradford WD, Chen J, Krumholz HM. Under-utilisation of beta-blockers after acute myocardial infarction. Pharmacoeconomic implications. Pharmacoeconomics 1999 Mar;15(3):257-68.

American College of Cardiology/ American Heart Association Updated guidelines 2004: Antman et al., Management of Patients With STEMI: Executive Summary

Kramer JM, et al., National Evaluation of Adherence to Beta-Blocker Therapy for 1 Year After Acute Myocardial Infarction in Patients With Commercial Health Insurance. American Heart Journal 2006;152:454.e1-454.8e.

Krumholz HM, Radford MJ, Wang Y, Chen J, Heiat A, Marciniak TA- National use and effectiveness of beta-blockers for the treatment of elderly patients after acute myocardial infarction. National Cooperative Cardiovascular Project. JAMA, 1998; 280:623-629.

American Heart Association. 2006 Heart and Stroke Statistical Update. http://circ.ahajournals.org/cgi/content/short/113/6/e85

National Institutes of Health, National Heart, Lung, and Blood Institute. Morbidity and Mortality: 2000 Chart Book on Cardiovascular, Lung, and Blood Diseases.

Philips KA, Shlipak M, Coxson P, Weinstein M, Goldman L. The Potential Health and Economic Benefits of Increased Beta-Blocker Utilization Following Myocardial Infarction. Abstract presented by Kathryn A. Philips at the Academy for Health Services Research and Health Policy (AHSR) 2000, Annual Meeting.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Persistent Beta-Blocker use in treatment after a heart attack reduces the risk of mortality, reduces the risk and severity of reinfarction, and improves the preservation of the left ventricular function.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:

Performance Rates
Persistence of
Beta Blocker Percentiles

Treatment	N	Mean	10th	25th	50th	75th	90th	
Commercial 2005		173	67.4	53.6	61.3	69.0	75.5	79.0
Commercial 2006		178	70.3	58.0	65.0	71.0	76.6	81.0
Medicare 2005	83	61.3	41.4	52.3	64.1	73.8	80.0	
Medicare 2006	105	65.4	45.5	58.1	67.7	75.4	83.0	
Medicaid 2005	13	70.5	55.1	62.3	77.8	81.7	84.8	
Medicaid 2006	25	69.8	51.4	62.0	72.0	77.5	80.5	

1b.3 Citations for data on performance gap:
NA

1b.4 Summary of Data on disparities by population group:
NA

1b.5 Citations for data on Disparities:
NA

1b C☐ P☐ M☐ N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Both short- and long-term use of beta-blockers reduce mortality after an AMI. A meta-analysis of 31 long-term trials (6–48 month use of beta-blockers after AMI) indicates a 23 percent reduction in the odds of death. An analysis of 51 short-term trials (up to 6 weeks after the onset of pain) indicates a 4 percent reduction in the odds of death (Freemantle, 1999). There is also indication that beta-blocker therapy can lead to a 22 percent relative risk reduction for hospital readmission during the first year (Bradford et al, 1999).

1c C☐ P☐ M☐ N☐

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

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

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

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., … [1]

1c.2-3. Type of Evidence:

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**

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

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
Beta-Blockers (2007 Update)
Class I
1. Oral beta-blocker therapy should be initiated in the first 24 hours for patients who do not have any of the following: 1) signs of heart failure, 2) evidence of a low output state, 3) increased risk* for cardiogenic shock, or 4) other relative contraindications to beta blockade (PR interval greater than 0.24 seconds, second- or third-degree heart block, active asthma, or reactive airway disease). (Level of Evidence: B) (Modified recommendation [changed Level of Evidence and text])
2. Patients with early contraindications within the first 24 hours of STEMI should be reevaluated for candidacy for beta-blocker therapy as secondary prevention. (Level of Evidence: C) (2004 recommendation remains current in 2007 update)
3. Patients with moderate or severe left ventricular (LV) failure should receive beta-blocker therapy as secondary prevention with a gradual titration scheme. (Level of Evidence: B) (2004 recommendation remains current in 2007 update)

Class IIa
1. It is reasonable to administer IV beta-blockers at the time of presentation to STEMI patients who are hypertensive and who do not have any of the following: 1) signs of heart failure, 2) evidence of a low output state, 3) increased risk* for cardiogenic shock, or 4) other relative contraindications to beta blockade (PR interval greater than 0.24 seconds, second- or third-degree heart block, active asthma, or reactive airway disease). (Level of Evidence: B) (Modified recommendation [changed text])

Class III
1. IV beta blockers should not be administered to STEMI patients who have any of the following: 1) signs of heart failure, 2) evidence of a low output state, 3) increased risk* for cardiogenic shock, or 4) other relative contraindications to beta blockade (PR interval greater than 0.24 seconds, second- or third-degree heart block, active asthma, or reactive airway disease). (Level of Evidence: A) (New recommendation)
*Risk factors for cardiogenic shock (the greater the number of risk factors present, the higher the risk of developing cardiogenic shock) are age greater than 70 years, systolic blood pressure less than 120 mm Hg, sinus tachycardia greater than 110 bpm, and increased time since onset of symptoms of STEMI.

1c.10 Clinical Practice Guideline Citation: ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to revise the 1999 guidelines for the Management of Acute Myocardial Infarction). (2) 2007 focused update of the ACC/AHA 2004 guidelines for the management of patients with ST-elevation myocardial infarction. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines.

1c.11 National Guideline Clearinghouse or other URL:

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
Class I, IIa, III (see above)

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

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

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

Size of treatment effect:

CLASS I
Benefit >>> Risk
Procedure/Treatment
SHOULD be performed/ administered

CLASS IIa
Benefit >> Risk
Additional studies with focused objectives needed
IT IS REASONABLE to perform procedure/administer treatment

CLASS IIb
Benefit > Risk
Additional studies with broad objectives needed; additional registry data would be helpful

Procedure/Treatment MAY BE CONSIDERED

CLASS III
Risk > Benefit
No additional studies needed
Procedure/Treatment should NOT be performed/administered SINCE IT IS NOT HELPFUL AND MAY BE HARMFUL

Estimate of Certainty (Precision) of Treatment Effect:

LEVEL A
Multiple (3–5) population risk strata evaluated*
General consistency of direction and magnitude of effect
•Recommendation that procedure or treatment is useful/effective
•Sufficient evidence from multiple randomized trials or meta-analyses
•Recommendation in favor of treatment of procedure being useful/effective
•Some conflicting evidence from multiple randomized trials or meta-analyses
•Recommendation´s usefulness/efficacy less well established
•Greater conflicting evidence from multiple randomized trials or meta-analyses
•Recommendation that procedure or treatment is not useful/effective and may be harmful
•Sufficient evidence from multiple randomized trials or meta-analyses
LEVEL B
Limited (2–3) population risk strata evaluated*
•Recommendation that procedure or treatment is useful/effective
•Limited evidence from single randomized trial or nonrandomized studies
•Recommendation in favor of treatment of procedure being useful/effective
•Some conflicting evidence from single randomized trial or nonrandomized studies
•Recommendation´s usefulness/efficacy less well established
•Greater conflicting evidence from single randomized trial or nonrandomized studies
•Recommendation that procedure or treatment is not useful/effective and may be harmful
•Limited evidence from single randomized trial or nonrandomized studies
LEVEL C
Very limited (1–2) population risk strata evaluated*
•Recommendation that procedure or treatment is useful/effective
•Only expert opinion, case studies, or standard-of-care
•Recommendation in favor of treatment of procedure being useful/effective
•Only diverging expert opinion, case studies, or standard-of-care
•Recommendation´s usefulness/efficacy less well established
•Only diverging expert opinion, case studies, or standard-of-care
•Recommendation that procedure or treatment is not useful/effective and may be harmful

•Only expert opinion, case studies, or standard-of-care 1c.14 **Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 **Do you have a web page where current detailed measure specifications can be obtained?** S.2 **If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** A 180-day course of treatment with beta-blockers. Identify all members in the denominator population whose dispensed days supply is =135 days in the 180 days following discharge. Persistence of treatment for this measure is defined as at least 75 percent of the days supply filled. To determine continuity of treatment during the 180-day period, sum the number of allowed gap days to the number of treatment days for a maximum of 180 days (i.e., 135 treatment days + 45 gap days = 180 days); identify all prescriptions filled within 180 days of the Discharge Date. To account for members who are on beta-blockers prior to admission, the organization should factor those prescriptions into adherence rates if the actual treatment days fall within the 180 days following discharge. 2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** Discharged alive from an acute inpatient setting with an AMI from July 1 of the year prior to the measurement year through June 30 of the measurement year. 2a.3 **Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** None	
2a.4 **Denominator Statement (***Brief, text description of the denominator - target population being measured***):** Ages: 18 years and older as of December 31 of the measurement year. Continuous Enrollment: Discharge date through 180 days after discharge. Event/Diagnosis: Discharged alive from an acute inpatient setting with an AMI from July 1 of the year prior to the measurement year through June 30 of the measurement year. If a member has more than one episode of AMI from July 1 of the year prior to the measurement year through June 30 of the measurement year, the organization should only include the first discharge and must use the codes listed in Table PBH-A to identify AMIs. 2a.5 **Target population gender:** 2a.6 **Target population age range:** 18 years and older 2a.7 **Denominator Time Window (***The time period in which cases are eligible for inclusion in the*	**2a-specs** **C☐** **P☐** **M☐** **N☐**

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

denominator):
Discharged alive from an acute inpatient setting with an AMI from July 1 of the year prior to the measurement year through June 30 of the measurement year.

2a.8 **Denominator Details (***All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**

Description	ICD-9-CM Diagnosis
AMI	410.x1*

2a.9 **Denominator Exclusions (***Brief text description of exclusions from the target population***):** Exclude patients who are identified as having a contraindication to beta-blocker therapy or previous adverse reaction to beta-blocker therapy. Look as far back as possible in the patients history through either administrative data or medical record review for evidence of contraindication or a previous adverse reaction to beta-blocker therapy.

Codes to identify contraindications to beta-blockers:
History of asthma: prescription: inhaled corticosteroids, ICD-9: 493;
Hypotension: 458;
Heart block > 1 degree: 426.0, 426.12, 426.13, 426.2-426.4, 426.51, 426.52-426.54, 426.7;
Sinus bradycardia: 427.81;
COPD: 491.2, 496, 506.4

2a.10 **Denominator Exclusion Details (***All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Table PBH-C Codes to Identify Exclusions

Description	ICD-9-CM Diagnosis
History of asthma	493
Hypotension	458
Heart block >1 degree	426.0, 426.12, 426.13, 426.2-426.4, 426.51-426.54, 426.7
Sinus bradycardia	427.81
COPD	491.2, 496, 506.4

Table PBH-D Medications to Identify Exclusions (History of Asthma)

Description	Prescription
Bronchodilator combinations	• budesonide-formoterol • fluticasone-salmeterol
Inhaled corticosteroids	• beclomethasone • budesonide • flunisolide • mometasone • triamcinolone fluticasone

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

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

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

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

2a.18-19 **Type of Score:** Rate/proportion
2a.20 **Interpretation of Score:** Better quality = Higher score
2a.21 **Calculation Algorithm (***Describe the calculation of the measure as a flowchart or series of steps***):**
NA

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

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

After a measure is created, it will go through first-year analysis. This anaysis consists of a review of data completeness, national results, regional results, and eligible population and prevalence. The first-year results are compared by data collection methodology, health plan accreditation status and finally, are compared to the field test results.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
NA

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic administrative data/claims

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
NA

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

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

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

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

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** Product Line Reporting Type Beta binomial Reliability

Commercial	HMO + PPO	0.833065189
Commercial	HMO Only	0.961358318
Commercial	PPO Only	0.726874745
Medicare	HMO + PPO	0.832793196
Medicare	HMO Only	0.934067295
Medicare	PPO Only	0.620445218
Medicaid	HMO	0.782609142

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
Reliability was estimated by using the beta-binomial model. Beta-binomial is a better fit when estimating the reliability of simple pass/fail rate measures as is the case with most HEDIS measures. The beta-binomial model assumes the plan score is a binomial random variable conditional on the plan´s true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates. The beta distribution can be symmetric, skewed or even U-shaped.

Equation for calculating the reliability:
Reliability = Variance (plan-to-plan) / [Variance (plan-to-plan) + Variance (plan-specific-error]

Reliability used here is the ratio of signal to noise. The signal in this case is the proportion of the variability in measured performance that can be explained by real differences in performance. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in performance.

2b
C ☐
P ☐
M ☐
N ☐

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

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

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
NA

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: NA

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
NA

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
NA

2c C☐ P☐ M☐ N☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
NA

2d.2 Citations for Evidence:
NA

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

2d.4 Analytic Method *(type analysis & rationale)*:
NA

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

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: NA

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

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

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: NA

2e C☐ P☐ M☐ N☐ NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: NA

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
NA

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
NA

2f C☐ P☐ M☐ N☐

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)*: NA

2g C☐ P☐ M☐

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

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure ... [2]

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND ... [3]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [4]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in trea ... [5]

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage ... [6]

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

2g.2 Analytic Method *(type of analysis & rationale)*: NA **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: NA	**N**☐ **NA**☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: NA **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** NA	**2h** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C**☐ **P**☐ **M**☐ **N**☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): Healthcare Effectiveness Data and Information Set (HEDIS) - Health Plans and Physician Measurement **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** Quality Compass: http://www.ncqa.org/tabid/177/Default.aspx America´s Best Health Plans: http://www.ncqa.org/tabid/506/Default.aspx **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)*: None **3a.5 Methods** *(e.g., focus group, survey, QI project)*: NA **3a.6 Results** *(qualitative and/or quantitative results and conclusions)*: NA	**3a** **C**☐ **P**☐ **M**☐ **N**☐
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** None	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?**	**3b** **C**☐ **P**☐ **M**☐

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

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

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

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

NA	N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** NA 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** NA	3c C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	3
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	3 C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition)	4a C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	4b C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	4c C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** NA	4d C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** NA	4e C☐ P☐ M☐ N☐

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

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

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

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

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

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

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*)**:** NA **4e.3 Evidence for costs:** NA **4e.4 Business case documentation:** NA	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION
Co.1 Measure Steward (Intellectual Property Owner) **Co.1 Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 **Co.2 Point of Contact** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-
Measure Developer If different from Measure Steward **Co.3 Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 **Co.4 Point of Contact** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-
Co.5 Submitter If different from Measure Steward POC Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-, National Committee for Quality Assurance
Co.6 Additional organizations that sponsored/participated in measure development
ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development **Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.** NCQA follows a standard process of vetting members of the measurement advisory panel for conflicts of interest.
Ad.2 If adapted, provide name of original measure: **Ad.3-5 If adapted, provide original specifications URL or attachment**
Measure Developer/Steward Updates and Ongoing Maintenance **Ad.6 Year the measure was first released:**

Ad.7 Month and Year of most recent revision: 07, 2009 **Ad.8 What is your frequency for review/update of this measure?** pproximately every 3 years, sooner if the clinical guidelines have changed significantly. **Ad.9 When is the next scheduled review/update for this measure?**
Ad.10 Copyright statement/disclaimers:
Ad.11 -13 Additional Information web page URL or attachment:
Date of Submission (*MM/DD/YY*)**:** 12/31/2010

Page 4: [1] Comment [k5] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 10: [2] Comment [k13] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 10: [3] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

Page 10: [4] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR

rationale/data support no risk adjustment.

Page 10: [5] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Page 10: [6] Comment [k19] **Karen Pace** **10/5/2009 8:59:00 AM**

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

Reliability was estimated by using the beta-binomial model. Beta-binomial is a better fit when estimating the reliability of simple pass/fail rate measures as is the case with most HEDIS® health plan measures. The beta-binomial model assumes the plan score is a binomial random variable conditional on the plan's true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates. The beta distribution can be symmetric, skewed or even U-shaped.

Reliability used here is the ratio of signal to noise. The signal in this case is the proportion of the variability in measured performance that can be explained by real differences in performance. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in performance. The higher the reliability score, the greater is the confidence with which one can distinguish the performance of one plan from another. A reliability score greater than or equal to 0.7 is considered very good.

Measure Name	N Obs	N	Mean	Std Dev	Median	Mini-mum	Maxi-mum	10th Percentile	25th Percentile	75th Percentile	90th Percentile	Lower 95% CL for Mean	Upper 95% CL for Mean	Coefficient of Variation (CV) (std/mean*100)	Beta-Binomial Reliability
Comprehensive IVD Care - BP control (<130/80)	2341	2338	44.32	14.01	44	2.86	96	28	34.29	52.00	62.50	43.75	44.89	31.61	0.62
Comprehensive IVD Care - BP control (<140/90)	2341	2338	75.14	12.46	76	24	100	60	68	84.00	91.43	74.64	75.65	16.58	0.67
Comprehensive IVD Care - BP screen	2341	2338	99.58	3.10	100	44	100	100	100	100.00	100.00	99.45	99.70	3.11	0.80
Comprehensive IVD Care - Complete lipid profile	2341	2338	86.23	11.36	88	24	100	71.43	80	96.00	100.00	85.77	86.69	13.18	0.73
Comprehensive IVD Care - LDL control (<100 mg/dL)	2341	2338	63.99	14.49	64	12	100	44	52	74.29	84.00	63.40	64.58	22.64	0.69
Comprehensive IVD Care - LDL control (<130 mg/dL)	2341	2338	78.87	12.10	80	24	100	62.86	72	88.00	94.29	78.38	79.36	15.34	0.67
Comprehensive IVD Care - LDL screen	2341	2338	86.77	11.11	88	24	100	72	80	96.00	100.00	86.32	87.23	12.80	0.73
Comprehensive IVD Care - Patient prescribed Aspirin or other antithrombotic	2341	2312	89.56	11.50	92	8.57	100	76	84	97.14	100.00	89.10	90.03	12.84	0.78

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0065 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Chronic Stable Coronary Artery Disease: Symptom and Activity Assessment
De.2 **Brief description of measure**: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period for whom there is documented results of an evaluation of level of activity AND an evaluation of presence or absence of anginal symptoms in the medical record
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This measure is paired with the following ACCF/AHA/AMA-PCPI measure: Chronic Stable Coronary Artery Disease: Symptom Management.
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness, Patient-centered, Equity De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, High resource use 1a.2 1a.3 **Summary of Evidence of High Impact:** •16.3 million Americans are living with coronary heart disease – of that 16.3 million, 54% are men and 46% are women. (1) •Coronary heart disease makes up more than half of all cardiovascular events in men and women less than 75 years of age. (1) •The lifetime risk of developing coronary heart disease after age 40 is 49% for men and 32% for women. (1) •The incidence of coronary heart disease in women lags behind men by 10 years for total coronary heart disease and by 20 years for more serious clinical events such as myocardial infarction and death.(1) •Coronary heart disease caused approximately 1 of every 6 deaths in the United States in 2007. (1) •While death rates have fallen from 1968 to the present, coronary heart disease is the largest killer of men and women in the United States. (1) It has been estimated that approximately 47% of this decrease is attributed to treatments (medical and surgical), while approximately 44% is attributed to changes in risk	**1a** C☐ P☐ M☐ N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

factors. (1)

•In 2007, the estimated direct and indirect cost for coronary heart disease in the United States is $177.5 billion. (1)

•In 2006, coronary artery disease was the most expensive condition treated in US hospitals at a cost of $52.6 billion (2) and accounted for 5% of total hospitalization costs.(3)

•Thirty percent of Medicare's total expenditures are applied to cardiovascular disease.(4)

•In 2007, $5.2 billion was spent on outpatient visits related to chronic ischemic heart disease.(5)

1a.4 **Citations for Evidence of High Impact:** (1) Roger VL, Go AS, Lloyd-Jones DM, et al; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2011 update: a report from the American Heart Association. Circulation. 2011;123:e000–e000. Available at: http://circ.ahajournals.org/cgi/reprint/CIR.0b013e3182009701v1
(2) Andrews RM. The national hospital bill: the most expensive conditions by payer, 2006. Agency for Healthcare Research and Quality, Statistical Brief #59. 2008. Available at: http://www.hcup-us.ahrq.gov/reports/ statbriefs/ sb59.pdf.
(3) Agency for Healthcare Research and Quality. HCUP Facts and Figures, 2006: Statistics on Hospital-based Care in the United State. Available at: http://www.hcup-us.ahrq.gov/reports/factsandfigures/facts_figures_2006. jsp#ex4_2b.
(4) Centers for Medicare and Medicaid Services. Health Care Financing Review: Medicare & Medicaid Statistical Supplement. Table 10.4: Hospital Outpatient bills, covered charges, and program payments under medicare by selected reasons for the visit: calendar year 2007. Baltimore, MD: Centers for Medicare and Medicaid Services; 2008. Available at"
http://www.cms.gov.MedicareMedicaidStatSupp/downloads/2008Table10.4.pdf
(5) Trogdon JG, Finkelstein EA, Nwaise IA, Tangka FK, Orenstein D. The economic burden of chronic cardiovascular disease for major insurers. Health Promotion Practice. 2007;8(3):234-242

1b. Opportunity for Improvement

1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Improvement of identification and assessment of anginal symptoms.

1b.2 **Summary of data demonstrating performance gap (variation or overall poor performance) across providers:**
A recently published study that was set in Australian primary care practices found that patients with stable angina who reported weekly anginal symptoms had worse quality of life and greater physical limitations compared to those reporting minimal anginal symptoms . Additionally, patients reporting weekly anginal symptoms varied across the clinic sites, highlighting potential differences in the identification of management of angina by site of care.(1)

Additional data is available in section 1 of the CAD measure testing summary.

1b.3 **Citations for data on performance gap:**
Beltrame JF, Weekes AJ, Morgan C, Tavella R, Spertus JA. The prevalence of weekly angina among patients with chronic stable angina in primary care practices: the coronary artery disease in general practice (CADENCE) study. Arch Int Med. 2009;169:1491-1499.

1b.4 **Summary of Data on disparities by population group:**
We are not aware of any publications/evidence outlining disparities in this area.

1b.5 **Citations for data on Disparities:**

1b
C☐
P☐
M☐
N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 **Relationship to Outcomes** (*For non-outcome measures, briefly describe the relationship to desired*

1c
C☐
P☐

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

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

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

outcome. For outcomes, describe why it is relevant to the target population): In order to effectively manage the symptoms of a patient with chronic stable coronary artery disease, an assessment of those symptoms needs to be performed. This assessment is the basis of any treatment modification that needs to be made. Effective management of the symptoms associated with chronic stable coronary artery disease (eg, chest pain, shortness of breath) may lead to improved patient quality of life which is an important, patient-centered outcome.

M☐ N☐

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**

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

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines*)**:**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*)**:**
The treatment of chronic stable angina has two complementary objectives: to reduce the risk of mortality and morbid events and to reduce symptoms. From the patient's perspective, it is often the latter that is of greater concern. The cardinal symptom of CAD is anginal chest pain or equivalent symptoms, such as exertional dyspnea. Often the patient suffers not only from discomfort of the symptom itself but also from accompanying limitations on activities and the associated anxiety that the symptoms may produce. (Not ranked--Serves as a basis for treatment modification) (ACC/AHA, 2002)

1c.10 Clinical Practice Guideline Citation: Gibbons RJ, Abrams J, Chatterjee K, Daley J, Deedwania PC, Douglas JS, Ferguson TB Jr., Fihn SD, Fraker TD Jr., Gardin JM, O'Rourke RA, Pasternak RC, Williams SV. ACC/AHA 2002 guideline update for the management of patients with chronic stable angina: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1999 Guidelines for the Management of Patients with Chronic Stable Angina). 2002. Available at: www.acc.org/clinical/guidelines/stable/stable.pdf

1c.11 National Guideline Clearinghouse or other URL:

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*)**:**
Not ranked

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**
ACC/AHA Classification of Recommendations and Levels of Evidence
Classification of Recommendations
Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.
Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb: Usefulness/efficacy is less well established by evidence/opinion.
Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.
Level of Evidence
Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.
Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies.

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

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

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

Level of Evidence C: Only consensus 1c.14 **Rationale for using this guideline over others:** It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other healthcare providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to include documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in the quality of care.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 **Do you have a web page where current detailed measure specifications can be obtained?** S.2 **If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Patients for whom there is documented results of an evaluation of level of activity AND an evaluation of presence or absence of anginal symptoms* in the medical record *Evaluation of level of activity and evaluation of presence or absence of anginal symptoms should include: •Documentation of Canadian Cardiovascular Society (CCS) Angina Class OR •Completion of a disease-specific questionnaire (eg, Seattle Angina Questionnaire or other validated questionnaire) to quantify angina and level of activity Numerator Definition: Canadian Cardiovascular Society (CCS) Angina Classification Class 0: Asymptomatic Class 1: Angina with strenuous Exercise Class 2: Angina with moderate exertion Class 3: Angina with mild exertion 1. Walking 1-2 level blocks at normal pace 2. Climbing 1 flight of stairs at normal pace Class 4: Angina at any level of physical exertion 2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** Once within measurement period. 2a.3 **Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** See attached for EHR Specifications. For Claims/Administrative: Report CPT II Code 1002F: Anginal symptoms and level of activity assessed	**2a-specs** **C☐** **P☐** **M☐** **N☐**
2a.4 **Denominator Statement (***Brief, text description of the denominator - target population being measured***):** All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period	

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

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Aged 18 years and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
12 consecutive months.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
See attached for EHR Specifications.
For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** None

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Not applicable.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
See attached for calculation algorithm.

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

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment PCPI_CAD-3_SymptomandActivityAssessment NQF 0065.pdf

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

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*

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

Home, Ambulatory Care: Office, Ambulatory Care: Clinic, Nursing home (NH) /Skilled Nursing Facility (SNF), Ambulatory Care: Hospital Outpatient, Assisted Living, Group homes

2a.38-41 **Clinical Services** (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 **Data/sample** *(description of data/sample and size)*: PCPI staff analysis of available testing data for this measure is ongoing and will be submitted to NQF separately and at the earliest possible date.

2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)*:

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:

2b C☐ P☐ M☐ N☐

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)*:

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*:
All PCPI performance measures are assessed for content validity by expert work group members during the development process. Additional input on the content validity of draft measures is obtained through a 30-day public comment period and by also soliciting comments from a panel of consumer, purchaser, and patient representatives convened by the PCPI specifically for this purpose. All comments received are reviewed by the expert work group and the measures are adjusted as needed. Other external review groups (eg, focus groups) may be convened if there are any remaining concerns related to the content validity of the measures.

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:

2c C☐ P☐ M☐ N☐

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s)**:

2d.2 **Citations for Evidence:**

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

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

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

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*: This measure does not employ the use of risk adjustment.

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

2e C☐ P☐ M☐ N☐ NA☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

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

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; ... [1]

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

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [2]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and w ... [3]

2e.3 Testing Results *(risk model performance metrics)*:	
2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:	
2f. Identification of Meaningful Differences in Performance	
2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*:	
2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:	
2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods	
2g.1 Data/sample *(description of data/sample and size)*:	
2g.2 Analytic Method *(type of analysis & rationale)*:	
2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)*:	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care	
2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: The measure is not stratified by patient groups or cohorts that could potentially be affected by disparities in care, nor are we aware of any existing research identifying disparities in care that may be relevant to this measure.	
2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans: We are not aware of any relevant disparities that have been identified.	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information	
3a.1 Current Use: In use	
3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): This measure is not yet used in any public reporting initiative. The measure will, however, be eligible for inclusion in the CMS PQRS and other government programs in 2012 and would thus provide information	**3a** C☐ P☐ M☐ N☐

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

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

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

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

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

about clinician participation to the public. The ACCF, AHA, and PCPI believe that the reporting of such participation information is a beneficial first step on a trajectory toward the public reporting of performance results, which is most appropriate after the measures are thoroughly tested and the reliability of the performance data has been validated. Continued NQF endorsement will facilitate our continued progress toward this public reporting objective.

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
All PCPI measures are suitable for use in quality improvement initiatives and are made freely available on the PCPI website and through the implementation efforts of medical specialty societies and other PCPI members. The PCPI strongly encourages the use of its measures in QI initiatives and seeks to provide information on such initiatives to PCPI members.

2010: Use in the CMS Physician Quality Reporting Initiative, in the registry and measure group options.

The American Heart Association's Get With The Guidelines®-Outpatient (GWTG-O) is a virtual performance improvement program that will improve adherence to evidence-based care in the outpatient setting, including specialist practices, general healthcare practices and health clinics. GWTG-Outpatient historically has had a long history of quality improvement for cardiovascular care. They have published 65 publications over the past 10 years. This program is designed to assist healthcare professionals in the outpatient setting to provide the best possible care to patients. This program collects a number of clinical measures for primary and secondary prevention. Clinical measure sets include those developed by American Heart Association, including those co-developed with other organizations, such as the American College of Cardiology Foundation and the American Medical Association, as well as other National Quality Forum endorsed measures.

Through this program, we collect data on clinical measures affecting a number of cardiovascular related conditions including, atrial fibrillation, coronary artery disease, heart failure, hypertension, diabetes, and preventative care. The primary analytical system used is Duke Clinical Research Institute. Get With The Guidelines®-Outpatient is a quality improvement program that can be utilized for Maintenance of Certification (MOC) with groups like American Board of Internal Medicine (ABIM) and American Board of Family Medicine (ABFM). ABIM has confirmed that the reports received from Get With The Guidelines-Outpatient can be utilized in completion of their Self-Directed Practice Improvement Module (PIM). The Self-Directed PIM provides one pathway for earning practice performance credit in ABIM's MOC program. This program includes several integral components: A preliminary Continuing Education (CE) course for the care team, data submission and reporting that is integrated with existing Electronic Health Records (EHRs)/health technology platforms, corresponding professional and provider education including webinars, online tools and resources, digital access to reference materials and videos through the Get With The Guidelines®-Outpatient website (http://outpatient.heart.org). The free continuing education activity titled, Outpatient Quality Improvement Focus, addresses the quality chasm and treatment gap, presents the benefits of quality improvement and identifies the steps necessary for implementation in the practice setting. This continuing education activity is certified for physicians, nurses and pharmacists.

The American College of Cardiology Foundation's Cardiology Practice Improvement Pathway (CPIP) uses clinical measure sets that are developed and specified by the American College of Cardiology Foundation with the American Heart Association and the American Medical Association's Physician Consortium for Performance Improvement for Hypertension, Stable Coronary Artery Disease, Heart Failure, and Atrial Fibrillation/Atrial Flutter. This program is intended as an approved quality improvement product that can be applied toward ABIM's Part IV practice performance requirement for Maintenance of Certification (ABIM AQI application submitted). They are in the process of creating a homepage on the Cardiosource.org homepage. The URL will be cardiosource.org/cpip. The web-based tool will be available after spring 2011. Through an online webinar hosted in November 2010, CPIP anticipates enrolling 50 - 100 practices during 2011 which will provide data from about 500-1,000 cardiologists. This ACCF initiative has contracted with the NY QIO: IPRO to analyze and scores based on thresholds. Of the 100 points needed to achieve recognition in the program, 70 come directly from clinical points such as the Heart Failure measures that are being submitted to NQF for consideration. IPRO will audit 5% of practices who submit their data for recognition evaluation.

The American College of Cardiology Foundation's has an Performance Improvement program entitled "A New Era" which is an educational format approved for credit by the American Medical Association (AMA) and the American Nursing Credentialing Center. This continuing medical education program blends both quality improvement and educational methodologies to provide a high quality learning experience that impacts changes to practice. These activities are structured, long-term processes in which a healthcare professional learns about the heart failure specific performance metrics, uses metrics to retrospectively assess his practice, applies these metrics prospectively over a useful interval, and reevaluates his performance. As part of this process, clinicians set goals for change and engage in structured learning activities to improve their performance. As of December 6th, 2010:
- 425 clinicians have enrolled in A New ERA
- The data is generated from all but four states (Montana, New Hampshire, South Dakota, and Wyoming)
- 82% are physicians
- 90% agreed or strongly agreed that performance metric data were valuable
- 80% agreed or strongly agreed that performance metric data review would help them improve their practice
- No one has finished the program, as it takes several months to do so

In 2008, the American College of Cardiology Foundation launched the PINNACLE program (formerly known as the Improving Continuous Cardiac Care or IC3). This was the first, national, prospective, outpatient based cardiac QI registry in the US. While participation is voluntary, this registry collects a variety of longituditional patient data at the point of service, including patients' symptoms, vital signs, medication, and recent hospitalizations. Jointly developed ACCF/AHA/PCPI measures for Coronary Artery Disease, Heart Failure, and Atrial Fibrillation. Data collection is achieved in 2 ways for the practices: paper forms or practice's electronic medical record data collection systems. The primary analytical system used is St. Luke's Mid America Heart Institute. The ACCF registry, PINNACLE, pulls data from outpatient facilities via paper flowsheets or 14 EHR vendors. As of December 10, 2010, there are 47 practices collecting data at 200 sites with 276,000 unique patients representing 1 million documented encounters.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)***:**

3a.5 Methods *(e.g., focus group, survey, QI project)***:**

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

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

3b.1 NQF # and Title of similar or related measures:
Maintenance submission of NQF #0065: Symptom and Activity Assessment

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization — **3b** C☐ P☐ M☐ N☐ NA☐

If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 Are the measure specifications harmonized? If not, why?

3c. Distinctive or Additive Value — **3c** C☐ P☐ M☐ N☐ NA☐

3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:

5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:

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

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

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

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Although we are not currently aware of any unintended consequences related to this measure, we plan through an active redesign of the PCPI website to facilitate the collection of information on unintended consequences from the users of PCPI measures.	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Costs to implement the measure have not been calculated. 4e.3 **Evidence for costs:**	**4e** **C☐** **P☐** **M☐** **N☐**

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

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

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

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

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

4e.4 **Business case documentation:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.2 **Point of Contact**
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Measure Developer If different from Measure Steward
Co.3 **Organization**
American Medical Association, 515 N. State St., Chicago, Illinois, 60654

Co.4 **Point of Contact**
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Co.5 **Submitter If different from Measure Steward POC**
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Co.6 **Additional organizations that sponsored/participated in measure development**
American College of Cardiology Foundation, American Heart Association

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
Bruce Abramowitz, MD, FACC (interventional cardiology; measure implementation)
Karen Alexander, MD (cardiology; geriatrics)
Craig T. Beam, CRE (patient representative)
Robert O. Bonow, MD, MACC, FAHA, FACP (cardiology)
Jill S. Burkiewicz, PharmD, BCPS (pharmacy)
Michael Crouch, MD, MSPH (family medicine)
David C. Goff, Jr., MD, PhD, FAHA, FACP (internal medicine)
Richard Hellman, MD, FACP, FACE (endocrinology)
Thomas James, III, FACP, FAAP (health plan representative)
Marjorie L. King, MD, FACC, MAACVPR (cardiology; cardiac rehabilitation)
Edison A. Machado, Jr., MD, MBA (measure implementation)
Eduardo Ortiz, MD, MPH (guideline development)
Michael O'Toole, MD (cardiology; electrophysiology; measure implementation)
Stephen D. Persell, MD, MPH (internal medicine; measure implementation)

Jesse M. Pines, MD, MBA, MSCE, FAAEM (emergency medicine)
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Joanna D. Sikkema, MSN, ANP-BC, FAHA (cardiology)
Peter K. Smith, MD (thoracic surgery)
Patrick J. Torcson, MD, FACP, MMM (hospital medicine)
John B. Wong MD, FACP (internal medicine)

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Ad.2 If adapted, provide name of original measure: Maintenance submission of NQF #0065: Symptom and Activity Assessment
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2003
Ad.7 Month and Year of most recent revision: 05, 2009
Ad.8 What is your frequency for review/update of this measure? Every 3 years or as new evidence becomes available that materially affects the measures
Ad.9 When is the next scheduled review/update for this measure? 05, 2012

Ad.10 Copyright statement/disclaimers: This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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Ad.11 -13 Additional Information web page URL or attachment: Attachment Testing Summary CAD NQF Final_10_10-634238751454123660.pdf
Date of Submission (*MM/DD/YY*)**:** 01/20/2011

Page 7: [1] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

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

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

AND

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

AND

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

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

Page 7: [2] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;**Error! Bookmark not defined.** OR

rationale/data support no risk adjustment.

Page 7: [3] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

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

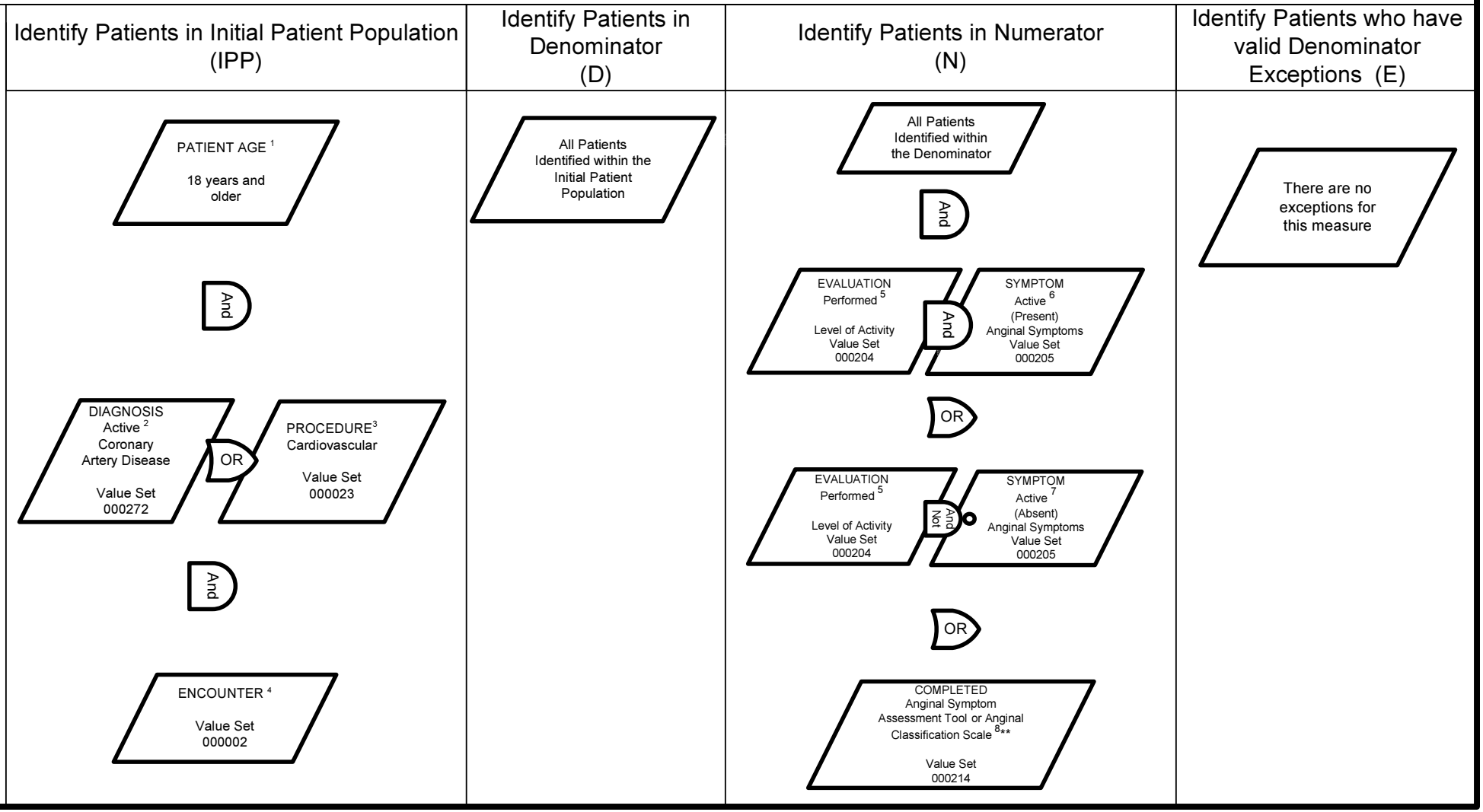
Clinical Topic	Chronic Stable Coronary Artery Disease (CAD)
Measure Title	Symptom & Activity Assessment
Measure #	PCPI # CAD-3 / PQRI # 196 / NQF # 0065
Measure Description	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease for whom there are documented results of an evaluation of level of activity AND an evaluation of presence or absence of anginal symptoms in the medical record within a 12 month period
Measurement Period	Twelve consecutive months
Initial Patient Population	Patient Age: Patients aged 18 years and older before the start of measurement period Diagnosis Active: Patient has a diagnosis of coronary artery disease before or simultaneously to encounter date Encounter: At least two visits with the physician, physician's assistant, or nurse practitioner during the measurement period
Denominator Statement	All patients aged 18 years and older with a diagnosis of coronary artery disease
Numerator Statement	Patients for whom there is documented results of an evaluation of level of activity AND an evaluation of presence or absence of anginal symptoms* in the medical record within a 12 month period *Evaluation of level of activity and evaluation of presence or absence of anginal symptoms should include: -Documentation of Canadian Cardiovascular Society (CCS) Angina Class OR -Completion of a disease-specific questionnaire (eg, Seattle Angina Questionnaire or other validated questionnaire) to quantify angina and level of activity Numerator Definition: Canadian Cardiovascular Society (CCS) Angina Classification Class 0: Asymptomatic Class 1: Angina with strenuous Exercise Class 2: Angina with moderate exertion Class 3: Angina with mild exertion 1. Walking 1-2 level blocks at normal pace 2. Climbing 1 flight of stairs at normal pace Class 4: Angina at any level of physical exertion
Denominator Exceptions	None

Measure Logic for Chronic Stable Coronary Artery Disease (CAD): Symptom & Activity Assessment

Measure Description: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease for whom there is documented results of an evaluation level of activity AND an evaluation of presence or absence of anginal symptoms in the medical record within a 12 month period

Measurement Period: 12 Consecutive Months

PCPI # CAD-3 / PQRI # 196 / NQF # 0065



PARAMETER SPECIFICATIONS (Value Sets are found in the Coding Appendices):

IPP: [1] Patient Age: 18 years and older before the start of measurement period; [2] Diagnosis Active: before or simultaneously to encounter date; [3] Procedure Cardiovascular: before or simultaneously to encounter date; [4] Encounter: ≥ to 2 visits during measurement period;

N: [5] Evaluation, Level of Activity, Performed: during the measurement period; [6] Symptom, Active: presence of anginal symptoms during measurement period; [7] Symptom, Active: absence of anginal symptoms during measurement period; [8] Completed, Anginal Symptom Assessment Tool or Anginal Classification Scale: either (1) Canadian Cardiovascular Society (CCS) Angina Class, or (2) other valid disease-specific questionnaire (eg, Seattle Angina Questionnaire); ** Listing of various Angina assessment tools is not intended to be an exhaustive list. We have provided the coding that is available in SNOMED-CT, therefore value set 000214 and its respective coding do not represent all possible numerator options for 'other valid disease-specific questionnaire';

Basic Measure Calculation:

$$\frac{(N)}{(D) - (E)} = \%$$

The PCPI strongly recommends that exception rates also be computed and reported alongside performance rates as follows:

Exception Calculation:

$$\frac{(E)}{(D)} = \%$$

Exception Types:
E= E1 (Medical Exceptions) + E2 (Patient Exceptions) + E3 (System Exceptions)
For patients who have more than one valid exception, only one exception should be be counted when calculating the exception rate

Initial Patient Population (IPP)	Denominator (D)	Numerator (N)	Denominator Exceptions (E)
Definition: The initial patient population identifies the general group of patients that the performance measureis designed to address; usually focused on a specific clinical condition (e.g., coronary artery disease, asthma). For example, a patient aged 18 years and older with a diagnosis of CADwho has at least 2 Visits during the measurement period.	**Definition:** The denominator defines the specific group of patients for inclusion in a specific performance measure based on specific criteria (e.g., patient's age, diagnosis, prior MI). In some cases, the denominator may be I dentical to the initial patient population.	**Definition:** The numerator defines the group of patients in the denominator for whom a process or outcome of care occurs (e.g., flu vaccine received).	**Definition:** Denominator exceptions are the valid reasons why patients who are included in the denominator population did not receive a process or outcome of care (described in the numerator). Patients may have Denominator Exceptions for medical reasons (e.g., patient has an egg allergy so they did not receive flu vaccine); patient reasons (e.g., patient declined flu vaccine); or system reasons (e.g., patient did not receive flu Vaccine due to vaccine shortage). These cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported. This group of patients constitutes the Denominator Exception reporting population – patients for whom the numerator was not achieved and a there is a valid Denominator Exception.
Find the patients who meet the Initial Patient Population criteria (IPP)	Find the patients who qualify for the denominator (D): ○ From the patients within the Patient Population criteria (IPP) select those people who meet Denominator selection criteria. (In some cases the IPP and D are identical).	Find the patients who qualify for the Numerator (N): ○ From the patients within the Denominator (D) criteria, select those people who meet Numerator selection criteria. ○ Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator	From the patients who did not meet the Numerator criteria, determine if the patient meets any criteria for the Denominator Exception (E1 + E2+E3). If they meet any criteria, they should be removed from the Denominator for performance calculation. As a point of reference, these cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported.

AMA-PCPI Level I EHR Specification
Chronic Stable Coronary Artery Disease
Symptom Activity Assessment (CAD-3)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.00	AMI ANTEROLATERAL,UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.01	AMI ANTEROLATERAL, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.02	AMI ANTEROLATERAL,SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.10	AMI ANTERIOR WALL,UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.11	AMI ANTERIOR WALL, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.12	AMI ANTERIOR WALL,SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.20	AMI INFEROLATERAL,UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.21	AMI INFEROLATERAL, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.22	AMI INFEROLATERAL,SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.30	AMI INFEROPOST, UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.31	AMI INFEROPOST, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.32	AMI INFEROPOST, SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.40	AMI INFERIOR WALL,UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.41	AMI INFERIOR WALL, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.42	AMI INFERIOR WALL,SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.50	AMI LATERAL NEC, UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.51	AMI LATERAL NEC, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.52	AMI LATERAL NEC, SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.60	TRUE POST INFARCT,UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.61	TRUE POST INFARCT, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.62	TRUE POST INFARCT,SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.70	SUBENDO INFARCT, UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.71	SUBENDO INFARCT, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.72	SUBENDO INFARCT, SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.80	AMI OTHER SPEC SITE, UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.81	AMI OTHER SPEC SITE, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.82	AMI OTHER SPEC SITE, SUBSEQ
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.90	AMI NOS, UNSPEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.91	AMI NOS, INITIAL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	410.92	AMI NOS, SUBSEQUENT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.0	POST MI SYNDROME
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.1	INTERMED CORONARY SYND
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.81	ACUTE COR OCCLSN W/O MI
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	411.89	AC ISCHEMIC HRT DIS NEC
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	412	OLD MYOCARDIAL INFARCT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.0	ANGINA DECUBITUS
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.1	PRINZMETAL ANGINA
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	413.9	ANGINA PECTORIS NEC/NOS
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.00	COR ATH UNSPEC VESSEL NTV/GRAFT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.01	COR ATH NATVE VESSEL
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.02	COR ATH ATLG VN BPS GRAFT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.03	COR ATH NONATLG BIO GRAFT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.04	COR ATH MAMMARY ART BPS GRAFT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.05	COR ATH BPS GRAFT NOS
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.06	COR ATH NATV ART TP HRT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.07	COR ATH BPS GRAFT TP HRT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.8	CHR ISCHEMIC HRT DIS NEC

AMA-PCPI Level I EHR Specification
Chronic Stable Coronary Artery Disease
Symptom Activity Assessment (CAD-3)

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	414.9	CHR ISCHEMIC HRT DIS NOS
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	V45.81	STATUS-POST AORTOCOR BPS GRAFT
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I9	V45.82	STATUS-POST PTCA
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.0	Unstable Angina
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.1	Angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.8	Other forms of angina pectoris, Angina equivalent
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I20.9	Angina pectoris, unspecified
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery/ST elevation (STEMI) myocardial infarction involving diagonal coronary artery
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall (Acute transmural myocardial infarction of anterior wall)
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.11	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Inferoposterior transmural (Q wave) infarction (acute)
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall Acute transmural myocardial infarction of inferior wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.21	ST elevation (STEMI) myocardial infarction involving left circulflex coronary artery, ST elevation (STEMI) myocardial infarction involving oblique marginal coronary artery
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.29	ST elevation (STEMI) myocardial infarction involving other sites Acute transmural myocardial infarction of other sites
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.3	ST elevation (STEMI) myocardial infarction of unspecified site Acute transmural myocardial infarction of unspecified site Myocardial infarction (acute) NOS
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I21.4	Non-ST elevation (NSTEMI) myocardial infarction Acute subendocardial myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall/ Subsequent acute transmural myocardial infarction of anterior wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall Subsequent acute transmural myocardial infarction of inferior wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction Subsequent acute subendocardial myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites Subsequent acute transmural myocardial infarction of other sites
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site Subsequent acute myocardial infarction of unspecified site
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I23.7	Postinfarction angina

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.0	Acute coronary thrombosis not resulting in myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.1	Dressler's syndrome
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.8	Other forms of acute ischemic heart disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I24.9	Acute ischemic heart disease, unspecified
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.2	Old myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.5	Ischemic cardiomyopathy
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.6	Silent myocardial ischemia
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.82	Chronic total occlusion of coronary artery Complete occlusion of coronary artery Total occlusion of coronary artery
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.89	Other forms of chronic ischemic heart disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	I25.9	Chronic ischemic heart disease, unspecified
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	Z95.1	Presence of aortocoronary bypass graft
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	I10	Z95.5	Presence of coronary angioplasty implant and graft
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	10365005	right main coronary artery thrombosis

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Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	1755008	old myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	10273003	acute infarction of papillary muscle
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	15990001	acute myocardial infarction of posterolateral wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	22298006	myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	28248000	left anterior descending coronary artery thrombosis
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	29899005	coronary artery embolism
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	30277009	acute myocardial infarction with rupture of ventricle
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	32574007	past myocardial infarction diagnosed on ECG AND/OR other special investigation, but currently presenting no symptoms
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	42531007	microinfarct of heart
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	50570003	aneurysm of coronary vessels
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	52035003	acute anteroapical myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	53741008	coronary arteriosclerosis
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	54329005	acute myocardial infarction of anterior wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	57054005	acute myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	58612006	acute myocardial infarction of lateral wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	62695002	acute anteroseptal myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	63739005	coronary occlusion
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	65547006	acute myocardial infarction of inferolateral wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	67682002	coronary artery atheroma
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	70211005	acute myocardial infarction of anterolateral wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	70422006	acute subendocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	73795002	acute myocardial infarction of inferior wall
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	74218008	coronary artery arising from main pulmonary artery
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	75398000	anomalous origin of coronary artery
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	79009004	acute myocardial infarction of septum
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	87343002	prinzmetal angina
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	92517006	calcific coronary arteriosclerosis
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	123641001	left coronary artery occlusion
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	123642008	right coronary artery occlusion
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	129574000	postoperative myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	161502000	H/O: myocardial infarct at less than 60
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	161503005	H/O: myocardial infarct at greater than 60
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194798004	acute anteroapical infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194802003	true posterior myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194809007	acute myocardial infarction of atrium
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	194842008	single coronary vessel disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	194843003	double coronary vessel disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	194856005	subsequent myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	233817007	triple vessel disease of the heart
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233835003	acute widespread myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233838001	acute posterior myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233839009	old anterior myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233840006	old inferior myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233841005	old lateral myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233842003	old posterior myocardial infarction

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	233843008	silent myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	233970002	coronary artery stenosis
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	275905002	H/O: myocardial problem
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	304914007	acute Q wave myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	307140009	acute non-Q wave infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	308065005	H/O: Myocardial infarction in last year
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	314207007	non-Q wave myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	315348000	asymptomatic coronary heart disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	371068009	myocardial infarction with complication
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371803003	multi vessel coronary artery disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371804009	left main coronary artery disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	371805005	significant coronary bypass graft disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	394710008	first myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	398274000	coronary artery thrombosis
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	399211009	history of - myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	401303003	acute ST segment elevation myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	401314000	acute non-ST segment elevation myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	408546009	coronary artery bypass graft occlusion
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	418044006	myocardial infarction in recovery phase
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	420006002	obliterative coronary artery disease
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	421327009	coronary artery stent thrombosis
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	427919004	coronary arteriosclerosis due to radiation
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	428196007	mixed myocardial ischemia and infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Problem/Condition	SNM	428752002	recent myocardial infarction
000272	CAD	3	IPP	Coronary Artery Disease includes MI	Diagnosis/Condition/Problem	SNM	429245005	recurrent coronary arteriosclerosis after percutaneous transluminal coronary angioplasty
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33140	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33510	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33511	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33512	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33513	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33514	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33516	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33517	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33518	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33519	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33521	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33522	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33523	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33533	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33534	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33535	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	33536	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	92980	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	92981	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	92982	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	92984	

Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	92995	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	CPT	92996	
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	3546002	aortocoronary artery bypass graft with saphenous vein graft
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	10326007	coronary artery bypass with autogenous graft, three grafts
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	15256002	transmyocardial revascularization by laser technique
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	30670000	anastomosis of thoracic artery to coronary artery, double
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	39202005	coronary artery bypass with autogenous graft, four grafts
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	39724006	anastomosis of internal mammary artery to coronary artery, double vessel
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	48431000	anastomosis of thoracic artery to coronary artery, single
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	74371005	coronary artery bypass with autogenous graft, two grafts
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	81266008	heart revascularization
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	82247006	coronary artery bypass with autogenous graft, five grafts
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	90205004	cardiac revascularization with bypass anastomosis
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	119564002	internal mammary-coronary artery bypass graft
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	119565001	coronary artery bypass graft, anastomosis of artery of thorax to coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	174911007	revascularization of wall of heart
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175007008	saphenous vein graft replacement of one coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175008003	saphenous vein graft replacement of two coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175009006	saphenous vein graft replacement of three coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175011002	saphenous vein graft replacement of four or more coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175012009	other specified saphenous vein graft replacement of coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175021005	allograft bypass of coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175022003	allograft replacement of one coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175024002	allograft replacement of two coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175025001	allograft replacement of three coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175026000	allograft replacement of four or more coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175036008	revision of bypass for coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175037004	revision of bypass for one coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175038009	revision of bypass for two coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175039001	revision of bypass for three coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175040004	revision of bypass for four or more coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175041000	revision of connection of thoracic artery to coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175045009	connection of mammary artery to coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175047001	double implantation of mammary arteries into coronary arteries

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Value Set ID	Clinical Topic	Topic Indicator (measure #)	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175048006	single anastomosis of mammary artery to left anterior descending coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175050003	single implantation of mammary artery into coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175053001	connection of other thoracic artery to coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	175058005	other specified connection of other thoracic artery to coronary artery
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	232717009	coronary artery bypass graft
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	232719007	coronary artery bypass graft x 1
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	232720001	coronary artery bypass grafts x 2
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	232721002	coronary artery bypass grafts x 3
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	232722009	coronary artery bypass grafts x 4
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	232723004	coronary artery bypass grafts x 5
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	232724005	coronary artery bypass grafts greater than 5
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	265481001	double anastomosis of mammary arteries to coronary arteries
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	275215001	LIMA single anastomosis
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	275216000	RIMA single anastomosis
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	275227003	myocardial revascularization
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	275252001	LIMA sequential anastomosis
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	275253006	RIMA sequential anastomosis
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	287277008	indirect heart revascularization
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	309814006	aortocoronary bypass grafting
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	359597003	single internal mammary-coronary artery bypass
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	359601003	coronary artery bypass with autogenous graft of internal mammary artery, single graft
000023	CAD	3	IPP	Cardiac Surgery	Procedure	SNM	414088005	emergency CABG
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99201	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99202	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99203	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99204	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99205	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99212	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99213	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99214	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99215	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99241	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99242	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99243	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99244	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99245	
000002	CAD	3	IPP	Encounter Nursing Facility	Encounter	CPT	99304	
000002	CAD	3	IPP	Encounter Nursing Facility	Encounter	CPT	99305	
000002	CAD	3	IPP	Encounter Nursing Facility	Encounter	CPT	99306	
000002	CAD	3	IPP	Encounter Nursing Facility	Encounter	CPT	99307	
000002	CAD	3	IPP	Encounter Nursing Facility	Encounter	CPT	99308	
000002	CAD	3	IPP	Encounter Nursing Facility	Encounter	CPT	99309	
000002	CAD	3	IPP	Encounter Nursing Facility	Encounter	CPT	99310	

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000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99324	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99325	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99326	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99327	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99328	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99334	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99335	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99336	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99337	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99341	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99342	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99343	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99344	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99345	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99347	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99348	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99349	
000002	CAD	3	IPP	Encounter Outpatient	Encounter	CPT	99350	
000204	CAD	3	N	Level of Activity	Assessment	SNM	398636004	physical activity assessment
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	29857009	chest pain
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	422587007	nausea
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	272060000	fatigue - symptom
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	267036007	dyspnea
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	48694002	anxiety
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	415690000	sweating
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	404640003	dizziness
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	61490001	angina, class I
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	41334000	angina, class II
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	85284003	angina, class III
000205	CAD	3	N	Anginal Symptoms	Symptom	SNM	89323001	angina, class IV
000214	CAD	3	N	Anginal Symptom Assessment Tool or Angina Classification Scale	Risk category / assessment	SNM	134438001	Canadian Cardiovascular Society classification of angina

This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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PCPI Performance Measure Testing Results – Chronic Stable Coronary Artery Disease

The PCPI Testing Protocol outlines the comprehensive set of tests that should be conducted in different practice settings, using different data sources, for each performance measurement set. The PCPI recognizes that multiple testing projects will be needed to achieve the required test results for each measurement set. Moreover, testing and surveillance should be part of continued evaluation and updating of the measures.

This document presents results for the American College of Cardiology (ACC)/American Heart Association (AHA)/ PCPI Hypertension Physician Performance Measures from the CMS PQRI program, the DOQ program, a peer-reviewed study, a CAD measure pilot testing project and the Cardio-HIT project.

1. Where are the measures used and what are the documented performance rates ?

Performance rates for individual measures are found to vary across the measure reporting and testing programs. This is expected, in that the performance rates are derived from different data sources, different practice sites, and variation in both the program implementation of the measures and approaches to implementation of the measures at individual practices or by the physicians in the practice sites included in the testing project. Variation in performance rates across practice sites suggests that the measure is able to differentiate among practices. In addition, no single relatively high value of performance for a measure should be used as an indication of that measure being "topped out", and hence no longer important or meaningful to measure.

PCPI #	**NQF endorsed (#)**	**Measure**	**CMS PQRI**[1] (years, data source, performance 2007, 2008)	**DOQ-IT**[2] (performance mean)	**Persell Testing Project**[3] (performance)	**Cardio- HIT Phase II** [4](performance)
1		Blood pressure Measurement	-	86.9%	97.6%	
2		Lipid profile	#152 2009: claims, registry	83.3%	81.6%	
3	0065	Symptom and activity assessment	#196 2010: registry, MG			
4a		Smoking cessation (Queried)				
4b		Smoking cessation (Intervention)				
5	0067	Antiplatelet therapy	#6 2007: claims **72.6** % 2008: claims **69.3 %** 2009: claims, registry 2010: claims, registry, MG	82.2%	81.9%	83.95%
6	0074	Drug therapy for lowering LDL-cholesterol	#197 2010: registry, MG	50.0%	85.3%	70.91%
7	0070	Beta-blocker therapy – prior myocardial infarction	#7 2007: claims **24.1** % 2008: claims **75.8 %** 2009:, registry 2010: registry, EHR	50.0%	82.8%	69.17%
8	0066	ACE inhibitor or ARB therapy	#118 2008: claims **9.5 %** 2009: claims, registry 2010: registry	80%	85.2%	75.66%
9		Screening for diabetes				

[1] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

** Surrogate testing refers to testing measures, and the corresponding data elements (eg, numerators and denominators), that are similar to those in the PCPI measures.*

What are the reported exception rates? (# patients with valid exceptions / (# patients in denominator)

It is expected that reported exception rates will vary across measures and across the measure reporting and testing programs. This is primarily due to differences in the types of measure (eg, medications versus screening), data sources examined in testing, variation among the practice sites where the measures were implemented, and the types and number of reasons included in the measure specification (ie, medical reason, patient reason, and system reason). Any one value for a reported exception rate, in of itself, should not be interpreted as indication of gaming or patient selection behavior.

Measure	CMS PQRI[5]	Doren [6]	Cardio- HIT Phase II [7]
Blood pressure Measurement	This measure has no exceptions.		
Lipid profile	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		
Smoking cessation (Queried)	This measure has no exceptions.		
Smoking cessation (Intervention)	This measure has no exceptions.		
Antiplatelet therapy	4.2%	3.5%	4.38%
Drug therapy for lowering LDL-cholesterol	-	7.3%	8.56%
Beta-blocker therapy – prior myocardial infarction	8.1%	25.3%	14.53%
ACE inhibitor or ARB therapy	Not reported	10.1%	11.86%
Screening for diabetes	This measure has no exceptions.		
Symptom and activity assessment	This measure has no exceptions.		

[2] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

[3] Persell SD, Wright JM, Thompson JA, Kmetik KS, Baker DW. Automated review of electronic health records to assess quality of care for outpatients with Coronary Artery Disease. Arch Intern Med. 2006;166:2272-2277

[4] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

[5] 2007 PQRI Submission Data, Iowa Foundation for Medical Care. Available at: http://www.facs.org/ahp/pqri/pdfs/2008execsummary.pdf

[6] Doran T, Fullwood C, Reeves D, Gravelle H, and Roland M. Exclusion of Patients from Pay-for-Performance Targets by English Physicians. New England Journal of Medicine. July 17, 2008.

[7] Preliminary Cardio-HIT project data, provided by American Medical Association. Not for distribution or publication.

2. Which tests have been carried out in which settings or data sources? Tests of feasibility/ implementation, reliability, validity, and unintended consequences conducted in a variety of practice settings including (eg solo practices, large practices, academic practices, safety-net practices, single- and multi-specialty groups).

Setting / Data Source	Medical Record (Gold Standard) (Paper or Electronic)	EHR Reporting	Registry	Administrative Data (single source)	Administrative Data (multiple sources)	Administrative Data Plus Clinical Data
Solo Practice						
Specialty Practice	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Safety-net practice		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Academic Setting		• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			
Community Setting	• Feasibility • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability	• Feasibility • Parallel-forms Reliability • Inter-Rater Reliability			

Feasibility Testing

3. How confident are we that practices can accurately collect and report these measures in a sustainable fashion?

These measures have been tested and found to be generally feasible in EHR, paper, and claims data sources. Results from a study published by Persell, the AMA-sponsored Cardio-HIT project, and the CMS Doctors' Office Quality (DOQ) IT Project, as well as use in CMS's PGP Demonstration project and EHR demonstration project revealed that the CAD measures are feasible to collect, as currently specified.

The feasibility of a PCPI performance measure/measure set refers to:

- Whether or not data are stored in a codified field
- Which clinical codes sets are utilized/available
- Where in the record the data are found
- Necessary clarifications needed to implement the measure
- Documentation of challenges to measure implementation
- The extent to which clinical practices are able to interpret measure definitions and technical specifications, and a) integrate them into existing workflows and health information systems to collect, manage, and manipulate data elements; b) compute performance measures; and c) generate performance reports within a reasonable time frame and budget.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRS, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs
Location of data (eg, problem list, medication summary) was recorded for data elements as well as whether or not the data was codified using a standard code set such as LOINC or SNOMED

- Exported de-identified patient data to a warehouse for measure calculation -- successfully completed by all sites.
- Location of exception data useful to inform EHR design, CDS design.

Results

- Each of the practice sites mapped the data elements required for each of the CAD measures to their individual EHR and determined the additional system and work flow modifications required to integrate any additional data elements needed.
- Since each practice had a unique set of data fields, individual mapping of the data elements at the practice level was required. Each EHR required the development of additional data fields in order to achieve the functionality required to query and report on all data elements for all measures.
- An interface template was developed for each practice EHR which contains the unique set of data fields, validation requirements and acceptable values associated with ACC/AHA/PCPI measures. Using the interface template, each practice queried its EHR database to compile the data elements required for each measure. To assure consistent capture of data across a disperse set of EHR systems, the interface template identifies the submission of the prescribed coding system or standardized medical vocabulary as defined per the ACC/AHA/PCPI measure.
- It was not required that each data element be sent to the data warehouse using a specific coding system or standardized coding language but rather that each site would determine what specificity of data was feasible based on the current structure of data in their EHR. The consensus of the Cardio-HIT team was to provide industry accepted coded values (as identified by HITSP) if available. Examples include LOINC coding for lab tests, ICD for diagnoses and NDC for medications.
- In cases where the EHR was unable to support a medical vocabulary, an acceptable alternative was to substitute a "Y/N" value for those fields. For example, some sites were able to capture the prescription of a medication through the use of NDC codes but other sites determined that the use of Yes/No, medication prescribed (no CPT-II codes sent for medicaitons; CPT-II codes were sent for exceptions) was more feasible.

Percent of CAD Exceptions Found in Codified Data

	Problem List	Other Structured Text	Past Medical History	Free Text Notes/ Dictation	Allergy List	Drug List	Laboratory
All 4 CAD Measures	**80**	**53%**	**50%**	**16%**	**1%**	**0%**	**0%**

Doctor's Office Quality (DOQ) Project

Data Source

National feasibility study, the CMS Doctors' Office Quality[8] (DOQ) Project

Methods

Reviewers assessed the feasibility of use of the ACC/AHA/PCPI measures in offices by performing retrospective audits of paper medical records and electronic health records

Results

Limitations to feasibility were as follows:

DENOMINATOR IDENTIFICATION:

- ICD-9 coding was not always sufficient or accurate in identifying patients with CAD
- According to the specifications, patients were not required to have an office visit specifically addressing the CAD. Therefore, many patients with CAD as a secondary diagnosis were treated for other comorbid conditions during the office visit, and consequently, care processes for CAD were not present

NUMERATOR IDENTIFICATION:

- Antiplatelet Therapy
  - Site 1: Feasible with limitations.
    - Hospitalization and Transfusion documentation was not documented in a codified manner in the EHR. Available data is in a free text format.
  - Site 2: Feasible
- Symptom and activity assessment
  - Not used in this program
- Drug therapy for lowering LDL cholesterol
  - Site 1: Feasible with limitations.
    - Information on terminal illness is not documented in any codified format
  - Site 2: Feasible
- ACE inhibitor or ARB therapy
  - Site 1: Feasible with limitations.
    - LVF access code is not available or retrievable. Intolerance of drug is not obtainable.
  - Site 2: Feasible

CMS PQRI –2008 –Claims

- Three CAD measures were included in the 2008 CMS PQRI program.
- The rate of submissions accepted as appropriately coded were (2008):
  - Antiplatelet therapy **89.18** %
  - Beta-blocker therapy – prior myocardial infarction **31.69** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **65.45** %
    - **20.21** % of submissions were rejected due to an incorrect DX code
- Denominator mismatch rates were (2008):
  - Antiplatelet therapy **10.82** %
  - Beta-blocker therapy – prior myocardial infarction **68.31** %
    - **63.67** % of submissions were rejected due to an incorrect DX code
  - ACE inhibitor or ARB therapy **34.55**%
    - **20.21** % of submissions were rejected due to an incorrect DX code

[8] Doctors' Office Quality Project 2002-2005. Final Report. Available at: http://www.cms.hhs.gov/PhysicianFocusedQualInits/05_PFQIDOQ.asp

Reliability Testing

4. How confident are we that the measures accurately and consistently assess the performance of physicians providing the care assessed in the measure?

Reliability is whether two abstractors, reviewing the same data from the same data source, would come to the same conclusion as to the patient meeting the measure, not meeting the measure, or qualifying as an exception.

Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing[9]

Data Source:
Paper Medical Records
Methods
A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors
Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural)
Results
Overall reliability rate for all participating clinics was **98.1**%
Kappa statistic** for individual data elements:

- Beta blocker therapy = **1.00** *(no mismatches)*
- Diagnosis of CAD = **1.00** *(no mismatches)*
- Lipid profile = **0.98**
- Statin therapy = **0.95**
- Prior myocardial infarction = **0.91**
- Antiplatelet therapy = **0.88**
- Revascularization procedure = **0.82**

***see description of kappa statistics at end of this document for more information*

Doctor's Office Quality Pilot Project

Data Source:
2 practices sites with electronic health records
Methods
Abstractor responses were compared with "gold standard" responses determined by two abstractors familiar with the data definitions and who were responsible for abstractor training.
Results

Measure	Doctor's Office Quality (DOQ) Project
Blood pressure Measurement	48 / 48 **100** % 5 / 5 **100** %
Lipid profile	48 / 48 **100** % 3 / 5 **60** %
Antiplatelet therapy	45 / 48 **94** % 5 / 5 **100** %
Drug therapy for lowering LDL-cholesterol	48 / 48 **100** % 5 / 5 **100** %
Beta-blocker therapy – prior myocardial infarction	46 / 48 **96** % 5 / 5 **100** %
ACE inhibitor or ARB therapy	46 / 48 **96** % 4 / 5 **80** %

Measure Exceptions Validated

(and specific exception

5. Are exceptions clinically appropriate and consistently documented?

Exceptions found for these measures were clinically appropriate.

AMA PCPI Testing Project: Cardio-HIT

reasons documented to inform measure maintenance)

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project
46,737 eligible patients

Methods

Translated integrated measure specifications to data fields within practice EHRs

Results

All Exceptions	Medical Reason	Clinical Contraindication	Drug Allergy	Drug Interaction	Drug Intolerance
Overall (n=753)	96.3% (95.0% - 97.7%)	52.2% (48.5% - 55.8%)	14.9% (12.3% - 17.5%)	0.8% (0.2% - 1.4%)	33.0% (28.8% - 35.6%)
Antiplatelet therapy (n=97)	99.4% (97.8% - 100.9%)	28.9% (19.9% - 37.9%)	59.7% (50.0% - 69.5%)	5.8% (1.2% - 10.5%)	5.6% (0.99% - 10.1%)
Drug therapy for lowering LDL-C (n=394)	94.9% (92.7% - 97.0%)	40.6% (35.7% - 45.4%)	6.9% (4.4% - 9.4%)	0.00% (0.0% - 0.0%)	52.5% (47.6% - 57.4%)
Beta-blocker therapy for prior MI (n=114)	99.5% (98.1% - 100.8%)	83.7% (77.0% - 90.5%)	4.4% (0.6% - 8.2%)	0.0% (0.0% - 0.0%)	11.9% (5.9% - 17.8%)
ACE inhibitor/ARB therapy (n=121)	95.8% (92.3% - 99.3%)	78.7% (71.4% - 86.0%)	14.9% (8.5% - 21.2%)	0.0% (0.0% - 0.0%)	6.4% (2.0% - 10.8%)

MEASURE EXCLUSION DOCUMENTATION

MEASURE	VERBATIM DOCUMENTATION FOR EXCLUSIONS
ACE inhibitor or ARB therapy	I am going to keep pt off of ACE inhibitor therapy at this time, given the low blood pressure, and hypertrophic myopathy.
	Left nephrectomy.
	Altace, Cough;
	Diovan 320 Mg, 1 PO qd stopped 10/22 for increased cough
	Pt is somewhat hypertensive at today's office visit, and being a diabetic, would benefit from being on an ARB (cannot take ACE inhibitors). We had stopped the Cozaar because of a cough in 2006, but pt tells me that the cough has never gone away. Pt tells me that the cough did improve somewhat after stopping the Cozaar.
	The patient has been complaining recently on dry cough. Upon questioning, seems like cough started at the time when Micardis was started. Patient advised to hold Micardis and see if this will relieve cough.
	The patient has had significant improvement in his dizziness since reduction in the Avalide dose.
	Patient has been very noncompliant with follow up unless in a nursing home and would not use Coumadin or antiarrhythmics, which needed careful and dependable follow up.
Antiplatelet therapy	Antiplatelets, Medical reason
	Aspirin, Medical reason
	Allergy: Aspirin, Medical reason
	no antiplatelets, Pt on Coumadin
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then pt can have the upcoming procedure. A daily aspirin will also be encouraged at that time.
	The patient is to follow up with Dr. ___ Gastroenterology who noted angiodysplasia in the past. She/He is no longer on NSAIDS or aspirin. Her/His H and H have trended down overtime, and she received a transfusion with return to 10 and 30 which is our goal.
	fu subdural the patient hit pt's head on concrete after a fall on March 31. Left frontal subdural hematoma was diagnosed by CT scan. 5/1 /2007. Plavix and aspirin were stopped at that time
	I think the best thing at this time is to keep her on anticoagulation so she does not develop any further embolizations, dc asa. He/She seems to be safe and is not having any falls or any other problems related to his/her visual disturbance.
	UNWILLING TO ORDER ANTIPLATELET DUE LOW PLATELETS,ELEVATED PARTIAL THOMBOBLASTIN TIME AND POSSIBLY RELATED TO HYPERSPLENISM.

Beta-blocker therapy – prior myocardial infarction	Allergies: Beta Blockers, Reynaud's
	Beta Blocker, ? coronary artery spasm; patient had an apparent myocardial injury more than 10 years ago but has normal coronary arteries. Possibly a spasm or an embolus was raised at that point. I think that may be why patient is not on a beta blocker, but I need to review the old records.
Drug therapy for lowering LDL-cholesterol	dyslipidemia discussed niacin and patient is going to think about it
	Pt is to get a preoperative stress test. If there is no significant obstructive disease per the stress test then the pt can have the upcoming procedure. Will begin anti-lipid agents after the procedure.
	She has had a fasting lipid profile done at the last visit which showed an LDL of 143, which is slightly above goal of 130. However, her HDL was 76 which is excellent. We can discuss this at the next visit.
	For coronary disease. Pt will take aspirin and Pravachol as before. in this context, Zetia is no longer medically necessary so will discontinue

Location and Codification of Exceptions

	Allergy List		Drug List	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	145	2.07%	2	0.00%
Antiplatelet Therapy	65	1.54%	1	0.00%
Drug Therapy for Lowering LDL	31	0.00%	0	0.00%
Beta-blocker Therapy for Prior MI	21	0.00%	0	0.00%
ACE/ARB Therapy	28	7.14%	1	0.00%

	Free Text Notes/Dictation		Laboratory	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	183	25.14%	88	0.00%
Antiplatelet Therapy	28	10.71%	2	0.00%
Drug Therapy for Lowering LDL	46	4.35%	85	0.00%
Beta-blocker Therapy for Prior MI	47	44.68%	0	0.00%
ACE/ARB Therapy	62	32.26%	1	0.00%

	Other Structured		Past Medical History	
Measure	# Included	% Coded	# Included	% Coded
All CAD Measures	72	48.61%	44	50.00%
Antiplatelet Therapy	7	0.00%	10	40.00%
Drug Therapy for Lowering LDL	5	0.00%	3	0.00%
Beta-blocker Therapy for Prior MI	30	46.67%	22	72.73%
ACE/ARB Therapy	30	70.00%	9	22.22%

	Problem List		
Measure	# Included	% Coded	TOTAL
All CAD Measures	114	81.58%	648
Antiplatelet Therapy	13	76.92%	126
Drug Therapy for Lowering LDL	1	100.00%	171
Beta-blocker Therapy for Prior MI	71	83.10%	191
ACE/ARB Therapy	29	79.31%	160

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)		

Allergy or intolerance	61.46%	59		
Allergy List			47	0.00%
Drug List			2	0.00%
Free Text Notes/Dictation			7	0
Past Medical History			3	0.00%
GI Tract	17.87%	17		
Allergy List			2	0.00%
Assessment List			1	0.00%
Free Text Notes/Dictation			7	9.83%
H&P			1	0.00%
Past Medical History			2	59.37%
Problem List			4	71.60%
Other doc. by pract. for not prescribing therapy	10.99%	11		
Allergy List			7	25.00%
Consultation			1	0.00%
Free Text Notes/Dictation			3	0.00%
Blood	6.20%	6		
Consultation			0	0.00%
Free Text Notes/Dictation			2	25.37%
Laboratory			1	0.00%
Past Medical History			2	0.00%
Problem List			1	100.00%
End of Life Issues	0.35%	0		
H&P			0	0.00%
Hepatic Liver	3.12%	3		
Free Text Notes/Dictation			2	0.00%
Past Medical History			1	.
Problem List			1	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Top Medical Reasons for Exceptions – Antiplatelet Therapy

Medical Reason for Exception - Location	Frequency (%) †	Frequency (n)	Location Count	Percent Coded at Location
Renal	65.56%	42		
Allergy List			2	100.00%
Assessment List			15	88.05%
Consultation			0	0.00%
ED note			0	0.00%
Free Text Notes/Dictation			16	67.87%
Past Medical History			2	29.61%
Problem List			6	58.62%
Allergy or intolerance	13.73%	9		
Allergy List			9	0.00%
Other doc. by pract. for not prescribing therapy	5.62%	4		
Allergy List			2	0
Free Text Notes/Dictation			2	0
Moderate or severe aortic stenosis subaortic stenosis	3.38%	2		
Consultation			0	100.00%
Echo			0	100.00%
Free Text Notes/Dictation			0	0.00%

Past Medical History			2	0.00%
Adverse reaction to ACE inhibitor or ARB therapy	2.09%	1		
Allergy List			1	0.00%
Free Text Notes/Dictation			1	0.00%
Hyperkalemia	7.70%	5		
Allergy List			2	0.00%
Free Text Notes/Dictation			3	21.31%
End of Life Issues	0.39%	0		
Free Text Notes/Dictation			0	100.00%
Hypotension	1.13%	1		
Free Text Notes/Dictation			1	0.00%
Problem List			0	100.00%
Angioedema	0.39%	0		
ED note			0	0.00%
† Frequencies are given as a percent of the total number of Medical Exceptions for this measure				

Comparison of Data Sources

*Note: in these projects it is recommended to always compare the secondary data source to the current gold standard of manual abstraction of the medical record.

6. Is measure collection from different data sources comparable? How does automated measure calculation compare to manual measure abstraction?

Persell Published Study[10]

Data Source:

Single health system electronic health record system

Methods

Accuracy of CAD data elements was verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRS

For patients who appeared to fail the quality measure, researchers completed a manual review of each patient's electronic chart, focusing on free text and medical tests

Results

	Automated review alone	**Automated review plus manual review of free text physician notes for cases that failed quality measures**
Blood pressure Measurement	**97.6** %	**99.2** % (+1.5% change)
Lipid profile	**81.6** %	**87.5** % (+5.9% change)
Antiplatelet therapy	**81.9** %	**96.2** % (+14.3% change)
Drug therapy for lowering LDL-cholesterol	**92.5** %	**97.2** % (+ 4.7% change)
Beta-blocker therapy – prior myocardial infarction	**82.8** %	**90.3** % (+ 7.5% change)
ACE inhibitor or ARB therapy	**85.2** %	**89.3** % (+ 4.1% change)

Discrepancies between performance measures based on EHR automated review alone and those based on automated review plus manual review were due to two types of misclassification: failure to correctly identify performance of quality measures among true, eligible patients; and failure to correctly exclude patients. The rate of misclassification from both sources of error ranged from 33% (ACE inhibitor/ARB measure) to 81% (antiplatelet therapy measure) for the individual measures.

AMA PCPI Testing Project: Cardio-HIT

Data Source

5 physician offices with 5 different EHRs, in use for at least 4 years at time of project

46,737 eligible patients

Methods

- Translated integrated measure specifications to data fields within practice EHRs
- Accuracy of CAD data elements were verified by comparing automated measure abstraction and calculation against manual abstraction of an EHRs
- For two samples of patients, researchers completed a manual review of each patient's electronic chart
    - Sample 1: patients who appeared to fail the quality measure (did not meet numerator nor have exception)
    - Sample 2: patients who appeared to not meet the numerator and have an exception to the quality measure

Results

Performance rates calculated automatically by the data warehouse compared to the rates of performance, opportunities for improvement and misclassification rates determined with manually abstracted data samples

- Automated review alone: Overall performance for the three measures was 76.67% and varied among the measures:
    - Antiplatelet Therapy: 83.95%
    - Drug Therapy for Lowering LDL: 70.91%
    - Beta-blocker therapy for Prior MI: 69.17%
    - ACEI/ARB therapy: 75.66%
- Manual review alone: 25.37% of the cases were identified as failing to meet the measure (opportunities for improvement):
    - Antiplatelet Therapy: 48.26%
    - Drug Therapy for Lowering LDL: 7.66%
    - Beta-blocker therapy for Prior MI: 7.12%
    - ACEI/ARB therapy: 41.49%
- Discrepancies between performance measures based on EHRs automated review alone and those based on automated review plus manual review were due to two types of misclassification:
    - identify performance among true, eligible patients
    - failure to correctly exclude patients
- The overall rate of misclassification in the automatic calculation (identified from manual review) was 32.40% and varied across the measures:
    - Antiplatelet Therapy: 5.66%
    - Drug Therapy for Lowering LDL: 52.46%
    - Beta-blocker therapy for Prior MI: 60.56%
    - ACEI/ARB therapy: 11.06%

7. If automated reporting identifies a patient as meeting the measure, what likelihood is there that manual review will validate that finding?

This test has not yet been performed for this measure set.

8. Are the individual parts of the measure (numerator, denominator, exceptions) reliably calculated, as compared to the overall measure?

This test has not yet been performed for this measure set.

9. What proportion of patients that met the measure are correctly identified?

This test has not yet been performed for this measure set.

10. What proportion of patients that do not meet the measure are correctly identified?

AMA PCPI Testing Project: Cardio-HIT

Patients Automatically Identified as Exceptions	Agreement			
Measure	Mean Rate	S.E.	95% C.I.	N
All CAD Measures	92.57%	1.13%	90.26%, 94.88%	538
Antiplatelet Therapy	88.59%	3.19%	81.83%, 95.35%	99
Drug Therapy for Lowering LDL	93.85%	1.49%	90.75%, 96.96%	261
Beta-blocker Therapy for Prior MI	93.35%	2.78%	87.27%, 99.43%	80
ACE/ARB Therapy	92.53%	2.66%	86.79%, 98.26%	97

Patients Automatically Identified as Opportunities for Improvement	Agreement			
Measure	Mean Rate	S.E.	95 % C.I.	N
Coronary Artery Disease	25.37%	1.79%	21.78%, 28.96%	592
Antiplatelet Therapy	48.26%	3.62%	40.9%, 55.63%	190
Drug Therapy for Lowering LDL	7.66%	1.63%	4.26%, 11.05%	265
Beta-blocker Therapy for Prior MI	7.12%	3.48%	0%, 14.86%	55
ACE/ARB Therapy	41.49%	5.42%	30.26%, 52.73%	83

False Positive Opportunities for Improvement - Numerator Actually Met

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	31.57%	1.91%	27.74%, 35.4%	186.89	592
Antiplatelet Therapy	37.17%	3.50%	30.04%, 44.3%	70.71	190
Drug Therapy for Lowering LDL	30.95%	2.84%	25.19%, 36.71%	81.88	265
Beta-blocker Therapy for Prior MI	7.85%	3.64%	0%, 15.89%	4.29	55
ACE/ARB Therapy	36.37%	5.30%	25.38%, 47.36%	30.01	83

False Positive Opportunities for Improvement - Exceptions Actually Found, by Measure - Weighed Sample Data

Measure	Mean Rate	S.E.	95% C.I.	N - num	N - den
Coronary Artery Disease	10.66%	1.27%	8.09%, 13.23%	63.11	592
Antiplatelet Therapy	8.91%	2.07%	4.6%, 13.22%	16.95	190
Drug Therapy for Lowering LDL	8.93%	1.75%	5.31%, 12.56%	23.64	265
Beta-blocker Therapy for Prior MI	24.46%	5.81%	12.16%, 36.77%	13.38	55
ACE/ARB Therapy	11.08%	3.46%	3.7%, 18.46%	9.14	83

EHR "In Silo" Verification

Note: initially this may be of limited usefulness until EHR functionality and use progresses

11. Can EHR products reliably identify data elements and calculate these measures?

A "dummy" data set of patient data will be provided to several EHR vendors along with EHR measure specifications. The vendors will use this test file to determine if their system can reliably calculate the measures based on intended documentation patterns.

This test has not yet been performed for this measure set.

Predictive Validity	**12. Does high performance on these measures lead to better patient outcomes?** If the scientific evidence regarding the process of care is strong and widely accepted in the field, no formal evaluation of predictive validity is necessary. If the evidence is less strong, however, it is desirable to show that high performance leads to better patient outcomes. This test has not yet been performed for this measure set. Regarding hospital measures: Several articles published in 2006 and early 2007 have begun to assess the predictive validity of CMS Core Hospital Measures (acute myocardial infarction and heart failure) as they relate to short-term mortality rates.
Unintended Consequences	**13. Have monitoring and testing uncovered unexpected consequences of measurement?** Testing should be performed for anticipated unintended consequences. Unanticipated unintended consequences should be monitored for on a long term basis as they may only occur in later stages and widespread adoption. This test has not yet been performed for this measure set.
Project Descriptions	**Doctor's Office Quality Pilot Project** Data was captured at two large physician practice groups who use two distinct EHR systems. The study population of group 1 was their fee-for service Medicare patients. The study population was all non-Medicare patients for Group 2. Once the DOQ clinical measures were developed, the practices were given technical specifications to use to capture the quality measures from their EHR system. Feasibility was assessed for all measures, and some measures were implemented. **Persell Testing Project** Persell and team performed a retrospective electronic medical chart review comparing automated measurement with a 2-step process of automated measurement supplemented by review of free-text notes for apparent quality failures for all patients with CAD from a large internal medicine practice using a commercial EHR. The 7 performance measures included the following: Antiplatelet drug, lipid-lowering drug, beta-blocker following myocardial infarction, blood pressure measurement, lipid measurement, low-density lipoprotein cholesterol control, and angiotensin-converting enzyme inhibitor or angiotensin receptor blocker for patients with diabetes mellitus or left ventricular systolic dysfunction. **Chronic Stable Coronary Artery Disease Measurement Set Pilot Testing** A random sample of 100 medical records for patients with confirmed diagnosis of CAD were reviewed by two trained abstractors. Medical records were selected from 4 physician practices (mixture of cardiology practices, primary care practices, urban, and rural). **Cardio-HIT Project** The AMA received funding for Phase II of the Cardio-HIT project from the Agency for Healthcare Research and Quality (AHRQ). The AMA in collaboration with five (5) physician practice sites, the Iowa Foundation for Medical Care, and the National Committee for Quality Assurance, conducted a 2-year, observational study of exception reporting, building on the prior work under *Cardio-HIT*, a research collaborative of six (6) EHRs-enabled independent group practices that collected data and reported on nationally recognized physician performance measures for coronary artery disease and heart failure. In *Cardio-HIT Phase II*, we: (1) empirically documented the prevalence and patterns of exception reporting in these measures; (2) assessed the feasibility and accuracy of exception reporting by validating a sample of reported exceptions against manual EHRs record review; and (3) analyzed and addressed stakeholder perspectives on exception reporting to refine existing principles in the design of physician performance measures**.**

Kappa Agreement	**Kappa** — **Strength of Agreement** 0.00 — Poor 0.01 – 0.20 — Slight 0.21 – 0.40 — Fair 0.41 – 0.60 — Moderate 0.61 – 0.80 — Substantial 0.81 – 0.99 — Almost perfect Landis, J.R. and Koch, G. G. (1977) "The measurement of observer agreement for categorical data" in Biometrics. Vol. 33, pp. 159—174

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

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

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

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

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

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

(for NQF staff use) **NQF Review #:** 0076 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Optimal Vascular Care
De.2 **Brief description of measure**: 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).
1.1-2 **Type of Measure:** Outcome De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This is a composite "all or none" measure calculated at the patient level. Each individual patient needs to meet all four component targets to be considered to be numerator compliant. All components are contained within this measure and the measure is not paired with another measure.
De.4 **National Priority Partners Priority Area:** Patient and family engagement De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability, Payment incentive	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rati ng**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, Severity of illness 1a.2 1a.3 **Summary of Evidence of High Impact:** According to the MN Department of Health, vascular disease is a high impact clinical condition in Minnesota. More than 20% of all deaths in Minnesota are due to heart disease and more than 6% are due to stroke, making them the second and third leading causes of death, respectively, in the state behind cancer. Inpatient hospitalization charges alone in Minnesota were more than $1.85 billion for heart disease patients and $362 million for stroke patients in 2008. Risk factors reported by Minnesotans include 34% high blood cholesterol, 22% high blood pressure, 16.7% cigarette smoke, 6.7% diabetes, 62% overweight, and 16% physical inactivity. 1a.4 **Citations for Evidence of High Impact:** Minnesota Department of Health 2010 Fact Sheets on Heart Disease and Stroke in Minnesota; http://www.health.state.mn.us/divs/hpcd/chp/cvh/Data.htm	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement 1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** The intermediate physiological and biochemical outcomes included in this composite measure are modifiable lifestyle risk factors that can ultimately decrease the incidence of long term catastrophic events and chronic illness associated with	**1b** C☐ P☐ M☐ N☐

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

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

cardiovascular disease.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
For 2010 (2009 dates of service), 33.8% of the patients met all four component targets in the composite measure and were considered optimally managed. This rate is a weighted average of the total population of patients for clinics submitting data (Total Population = 95,751, Submitted = 63,241). 79% of the clinics submitted full population data, the remaining clinics provided a random sample. Of the clinics that were reportable (patient n >= 30), there was a wide range of variability with the lowest scoring clinic at 1.7% and the highest scoring clinic at 68.3%.

The trends for this measure have remained relatively unchanged:
2008 (2007 dates of service) = 33%
2000 (2008 dates of service) = 34%
2010 (2009 dates of service) = 34%

Percentage of Clinics within each Optimal Rate Range (reportable clinics)
0%-9.9% 4.4%
10%-19.9% 14.3%
20%-29.9% 21.9%
30%-39.9% 28.2%
40%-49.9% 22.2%
50%-59.9% 7.9%
60%-69.9% 1.2%

Individual rates of the components are as follows:
LDL <100 = 64%
Blood Pressure <130/80 = 58% *
Daily Aspirin Use = 92%
Tobacco Non-user = 81%

* Note for Blood Pressure: Historically and in currently reported data, the target was <130/80 for all IVD patients. For 2011 reporting (2010 dates of service) the target will be modified to <140/90 for IVD patients with a co-morbidity of diabetes and <130/80 for all other IVD patients.

Mean: 32.4%
Median: 33.3%
Standard Deviation: 0.13063 (13.1%)
Min: 1.7%
Max: 68.3%
(reflects reportable clinics, patient n >= 30)

Publicly reported data with clinic level rates is available on the MN HealthScores website www.mnhealthscores.org. Additionally, for more detailed information including highlights of top performers, breakdown by clinic site with confidence intervals please refer to our Health Care Quality Report posted on our corporate website at: www.mncm.org/site/?page=our_work&view=2

1b.3 Citations for data on performance gap:
In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the

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

patient's medical record.

Characteristics of the entities reporting data:

Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

1b.4 Summary of Data on disparities by population group:
The ischemic vascular disease population is not currently stratified when publicly reported by population group. MN Community Measurement plans to report statewide optimal vascular rates on Minnesota Health Care Program patients in our 2010 Health Care Disparities Report. 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
Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID
Date of birth: (MM/DD/YYYY)
Race/ethnicity: from list of MNCM-designated codes
Primary language: from list of MNCM-designated codes
Country of origin: from list of MNCM-designated codes
Zip code: 5-digit zip code of patient
Gender: M (male), F (female), U (unknown)
Co-morbidity of diabetes: 1 (yes), 2 (no)
Co-morbidity of depression: 1 (yes), 2 (no)

In 2010 (2009 dates of service), the proportion of medical groups that submitted Race/Ethnicity, Language and Country of Origin data to MNCM was as follows: 17% of medical groups submitted 100% REL data, 46% submitted partial REL data, 65% submitted no REL data.

1b.5 Citations for data on Disparities:
In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data:

Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were

identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

1c. Outcome or Evidence to Support Measure Focus

1c.1 **Relationship to Outcomes** (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** The intermediate physiological and biochemical outcomes included in this composite measure are modifiable lifestyle risk factors that can ultimately decrease the incidence of long term catastrophic events and chronic illness associated with ischemic vascular disease.

1c.2-3. **Type of Evidence:** Evidence-based guideline, Randomized controlled trial, Meta-analysis, Other Consensus Statement

1c.4 **Summary of Evidence** (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Evidence based guidelines fully support this measure, please see detail following.

1c.5 **Rating of strength/quality of evidence (***also provide narrative description of the rating and by whom***):**
ICSI Evidence Grading System www.icsi.org/guidelines_and_more/evidence_grading_system_6/. Please see section below for the narrative rating of strength/quality of evidence.

1c.6 **Method for rating evidence:** ICSI Evidence Grading System
A. Primary Reports of New Data Collection:
Class A: Randomized, controlled trial
Class B: Cohort study
Class C: Non-randomized trial with concurrent or historical controls Case-control study Study of sensitivity and specificity of a diagnostic test Population-based descriptive study
Class D: Cross-sectional study Case series Case report
B. Reports that Synthesize or Reflect Upon Collections of Primary Reports:
Class M: Meta-analysis Systematic review Decision analysis Cost-effectiveness analysis
Class R: Consensus statement, consensus report narrative review
Class X: Medical opinion
Citations are listed in the guideline utilizing the format of (Author, YYYY [report class]).
A full explanation of ICSI´s Evidence Grading System can be found at
http://www.icsi.org/evidence_grading_system_6/evidence_grading_system__pdf_.htm

1c.7 **Summary of Controversy/Contradictory Evidence:** Currently there is no controversial or contradictory evidence related to the composite outcome measure or any of its components.

1c.8 **Citations for Evidence (***other than guidelines***):** Please see citations within guideline quotes.

1c.9 **Quote the Specific guideline recommendation (***including guideline number and/or page number***):**
Institute for Clinical Systems Improvement (ICSI)
ICSI Stable Coronary Artery Disease April 2009
Address Modifiable Risk Factors and Comorbid Conditions:
Comorbid conditions that could affect myocardial ischemia may include hypertension, anemia, thyroid disease,
hypoxemia and others. Modifiable risk factors for coronary heart disease need to be evaluated and may include
smoking, inadequate physical activity, stress, hyperlipidemia, obesity, hypertension and diabetes mellitus. Intervention involving any risk factor pertinent to the patient is encouraged and may include education, goal setting, and follow-up as necessary (Rutherford, 1992 [R]; Shub, 1990 [R]).
Hyperlipidemia:
A fasting lipid profile should be evaluated for appropriate patients with stable coronary artery disease.

1c
C☐
P☐
M☐
N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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

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

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

Secondary prevention is important in these patients, who should be treated aggressively for hyperlipidemia. Many patients will require both pharmacologic and non-pharmacologic interventions to reach target goals. Target goals for hyperlipidemic patients with coronary artery disease include:
LDL – less than 100 mg/dL
HDL – 40 mg/dL or greater
Triglycerides – less than 150 mg/dL
(ALLHAT, 2002 [A]; Cannon, 2004 [A]; Downs, 1998 [A]; Heart Protection Study Collaborative Group, 2002 [A]; LaRosa, 1999 [M]; Lipid Research Clinics Program, 1984 [A]; Nissen, 2004 [A]; Pignone, 2000 [M]; Sever, 2003 [A]; Shepherd, 2002 [A]; Shepherd,1995 [A]; Topol, 2004 [R]; Goldberg, 1998 [A]; LIPID Study Group, 1998 [A]; Scandinavian Simvastatin Survival Study Group, 1994) [A].
Please also refer to the ICSI Lipid Management in Adults Guideline
Hypertension:
General health measures include the treatment of hypertension, which is not only a risk factor for development and progression of atherosclerosis, but also causes cardiac hypertrophy, augments myocardial oxygen requirements, and thereby intensifies myocardial ischemia in patients with obstructive coronary disease. The recommended target blood pressure is 130/80 mmHg or less. Because all stages of hypertension are associated with increased vascular events, the previous classifications of mild and moderate hypertension were discarded in favor of stages that emphasize these risks. The current classification emphasizes systolic as well as diastolic standards, as systolic hypertension has been associated with increased fatal and nonfatal cardiovascular events, and treatment has been shown to reduce cardiovascular morbidity and mortality (Chobanian, 2003 [R]; Liu, 1998 [C]; SHEP Cooperative Research Group, 1991 [A]; Staessen, 1997 [A]; World Health Organization/International Society of Hypertension, 1999 [R]).
Please also refer to ICSI Hypertension Diagnosis and Treatment Guideline
Tobacco Use:
Cigarette smoking may cause an acute cardiac ischemic event and may interfere with the efficacy of medications to relieve angina. Please also refer to the ICSI Preventive Services for Adults Guideline
Antiplatelet Therapy:
The use of one aspirin tablet daily (81-162 mg) is strongly recommended unless there are medical contraindications (Antiplatelet Trialists´ Collaboration, 1994 [A]; CAPRI, 1996 [A]; Fuster, 1993 [R]; Juul-Möller, 1992 [A]; Kurth, 2003 [A]; Ridker, 1991 [A]).The Antithrombotic Trialists´ Collaboration is a meta-analysis that analyzed 287 studies involving 135,000 patients for different aspects of antiplatelet therapy. When comparing the 500-1,500 mg versus 160-325 mg versus 75-150 mg daily regimens of aspirin in multiple trials, there was a trend of reduction in vascular events with decreased dose (odds reduction: 19% versus 26% versus 32%, respectively) (Antithrombotic Trialists Collaboration; 2002 [M]). Although the meta-analysis concludes that risk of gastrointestinal bleed was similar among doses 325 mg or less, other studies such as the CURE study showed increased bleeding risk with increasing the dose, without any increase in efficacy (Peters, 2003 [A]). The authors conclude that aspirin dose in the range of 75-150 mg should be given for the long-term prevention of serious vascular events in high risk patients, and that there may be a reduced benefit when increasing the dose over 150 mg daily. Doses available to most clinicians are in increments of 81 mg; therefore, the recommended dose range is 81-162 mg daily.

1c.10 Clinical Practice Guideline Citation: Institute for Clinical Systems Improvement (ICSI)
ICSI Stable Coronary Artery Disease April 2009
www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/coronary_artery_disease/coronary_artery_disease__stable__3.htl
ICSI Lipid Management in Adults October 2009
http://www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/lipid_management_3/lipid_management_in_adults__4.html
ICSI Hypertension Diagnosis and Treatment October 2008
www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/hypertension_4/hypertension_diagnosis_and_treatment__11.html
ICSI Preventive Services for Adults September 2010
http://www.icsi.org/guidelines_and_more/gl_os_prot/preventive_health_maintenance/preventive_services_for_adults/preventive_services_for_adults__11.html
1c.11 National Guideline Clearinghouse or other URL: Please note that all of the ICSI guidelines referenced are also listed in the National Guideline Clearinghouse: http://www.guideline.gov/browse/by-topic.aspx

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

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

Management of lipid levels: Patients with risk factors for coronary heart disease but no history of disease who receive lipid-lowering therapy are likely to experience a decreased risk of coronary heart disease. Conclusion Grade I [ICSI Lipid Management in October 2009 page 11]

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)*:
ICSI´s Conclusion Grade definitions parallel with USPSTF ratings of of High, Moderate & Low.
CONCLUSION GRADES
Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the conclusion.
Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.
Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.
Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results from different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.
Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

1c.14 Rationale for using this guideline over others:
The Institute for Clinical Improvement (ICSI) is a unique organization that is widely respected for its collaborative efforts with guideline development. ICSI´s purpose is to help improve patient care in Minnesota through collaboration and innovations in evidence-based medicine. The collaborative is unique in that it brings medical organizations, health plans and business representatives into the decision-making process. Providers in MN are engaged and respect this process and the resulting guideline recommendations.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, **met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Evaluation Rating**
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** 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). Please note: On 7/27/2010, the blood pressure component	**2a-specs** **C☐** **P☐** **M☐** **N☐**

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

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.

2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):**
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).

2a.3 **Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Please note that all of the denominator criteria apply to the numerator as well, but are not repeated in the numerator codes/ descriptions.

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 value field blank.

Blood Pressure Date [Date (mm/dd/yyyy)] AND
BP Systolic [Numeric] AND
BP Diastolic [Numeric]
Numerator calculation: numerator compliant is BP during the measurement period AND one of the following two targets: Systolic <140 AND AND Diastolic <90 if patient has co-morbidity of diabetes OR Systolic <130 AND Diastolic <80 for all other IVD patients.
Enter the date of the most recent Blood Pressure (BP) test prior to and including 12/31/YYYY (measurement period).
Other considerations:
• If a BP was never performed, leave the date and value fields blank.
• For multiple BPs on the same date, it is acceptable (not required) to use the lowest systolic value and lowest diastolic value from any of the readings on that date. The systolic and diastolic results do not need to be from the same reading.
• Do not enter BP date that occurred after measurement period.
• BP from any 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 reading.
• Nurse-only BP checks in the clinic may be used.
• Do not enter a BP that is associated with a surgical procedure, inpatient or ER visit, diagnostic testing or a diagnosis that is associated with acute pain.
• Do not enter BP reported by or taken by the patient.
Enter the "systolic" value according to the rules above for selecting the correct BP date. The systolic BP is the upper number. In the example of a BP 124/72, the systolic value is "124".
Enter the "diastolic" value according to the rules above for selecting the correct BP date. The diastolic BP is the lower number. In the example of a BP 124/72, the diastolic value is "72"

Tobacco Status Documentation Date [Date (mm/dd/yyyy)] AND
Tobacco Status [Numeric]
1 = Tobacco Free (patient does not use tobacco) 2 = No Documentation 3 = Current Tobacco User

Numerator calculation: Numerator compliant is Value 1 = Tobacco Free AND valid date
Enter the most recent date (prior to and including 12/31/YYYY (measurement period) that the patient's tobacco status was documented.
Other considerations:
• If the patient was not asked or there is no associated date with the patient's tobacco status, leave the tobacco date field blank and enter 2 (No Documentation) for the Tobacco Status.
• Do NOT enter any tobacco status date after the measurement period.
Enter the tobacco status. Tobacco includes any amount of cigarettes, cigars, pipes, or "chew."

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 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.
• 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:
• Use of non-steroidal anti-inflammatory agents
• Documented risk for drug interaction
• Uncontrolled hypertension defined as >180 systolic, >110 diastolic
• Other provider documented reason for not being on ASA therapy
Other considerations:
• If ASA Date field is completed (patient is taking ASA), leave the ASA Contraindication Date field blank (this field is only needed for patients not taking daily ASA with a documented contraindication to ASA). For patients taking Coumadin or Lovenox AND ASA, enter the ASA date and NOT the contraindication date.
• Contraindication date does not need to be in the measurement period. If only the month and year is known (e.g., GI Bleed- June YYYY), enter a valid date to indicate the time, (e.g., 6/01/YYYY). Look back at least 3 years for contraindication date. Looking back 4 years or more is optional. The MNCM auditor must be able to validate this date.
• If the patient is on an anticoagulant, enter the most recent date.
• If the ASA has been discontinued prior to a surgical procedure, do not count this as a contraindication, rather document this patient as taking ASA during the measurement period. NOTE: do not assume that a pre-op standing order like, "Do not take ASA seven days prior to the procedure," means that a patient is taking ASA every day; there must be other documentation in the record that the patient is taking daily ASA.

• If there is no documentation of taking ASA, anti-platelets or a contraindication, leave both date fields blank.

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
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.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Ages 18 to 75 during the measurement period

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
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 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.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
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 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

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

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

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
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]

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

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]

2a.12-13 Risk Adjustment Type: Case-mix adjustment

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

2a.15-17 Detailed risk model available Web page URL or attachment: Attachment MNCM Case Mix Risk Adjustment June 2010-634242034150216836.docx

2a.18-19 Type of Score: Weighted score/composite/scale
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
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.
Numerator logic is as follows:
Is Diabetes co-morbidity field "yes"? If yes, BP target of <140/90 applies. If no, BP target of <130/80 applies.
Is Blood Pressure date in the measurement year? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
If patient has co-morbidity of diabetes:
Is BP Systolic <140? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is BP Diastolic <90? If yes, numerator is compliant for this component. If no, numerator is noncompliant for

this component. Assess next variable.
If patient does not have co-morbidity of diabetes:
Is BP Systolic <130? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is BP Diastolic <80? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is LDL date in the measurement period (e.g., from 10/01/2009 to 12/31/2010)? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is Tobacco Status = 1 (Tobacco Free) and Tobacco Assessment Date a valid date? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
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.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)*:
Medical groups are encouraged to submit their full population of patients when possible. In 2010 (2009 dates of service), 79% of clinics in our state submitted full population for this measure; 21% submitted a random sample of no less than 60 patients at each clinical site location. This is to ensure that we have an adequate denominator at each clinic site location to accurately report rates at each clinic site location. We also calculate confidence intervals for each site. High performers are defined as clinics with rates and confidence intervals fully above the overall clinic average. For clinics whose total population is less than 60 patients, our policy is that they submit all patients. For the purpose of public reporting, we require that there be at least 30 denominator cases per clinic site location. If there are fewer than 30 patients in the denominator, the rates are not reported publicly.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
MNCM encourages medical groups to submit total population instead of sample when possible. Optimal care rates based on total population submission more precisely reflect the clinic's performance. In MNCM's annual Health Care Quality Report, the upper and lower confidence interval (CI) around the rate is displayed (this shows both a lower rate and an upper rate that would be possible if another random sample of patients was pulled for the measure). By submitting total population, the CI is more likely to be narrower. Clinics with a rate and CI that are fully above the statewide average are highlighted by MNCM as High Performers. If a clinic submits a sample, it is likely that the CI would be wider, and if the CI crosses the statewide average, the clinic would not achieve the designation of High Performer.

Submitting a sample is also an option (e.g., for clinics that use paper records or for clinics that do not have a fully implemented EMR). The requirements for submitting a sample are:
• Each clinic must submit a sample.
• If a clinic has less than 60 patients in the population for the measure, submit ALL patients (e.g., if a total of 59 patients are in the population for the measure, submit all 59 patients).
• If a clinic has 60 or more patients, first consider submitting all patients, otherwise a sample may be submitted. The minimum required sample is 60 patients per clinic site (e.g., if there are 79 eligible patients in the population, first consider submitting all 79 patients, otherwise submit a sample of at least 60).

Excel Random Number Generator:
For patient lists generated in Excel, use the "RAND" function to assign a random number to each record (please also see Microsoft Excel Help, topic RAND for more information):

1. Insert a blank column on the leftmost side of the spreadsheet
2. Label new column "RAND"
3. Place cursor in the first blank cell (A2) and type =RAND()
4. Press enter (a number like 0.793958 will appear)
5. Place the cursor back into this cell; resting over the corner to have the pointer change to a black cross, double click or drag the formula down to the last row/patient
6. Highlight the whole column and click Edit, Copy, Paste Special = Values to freeze the random number (otherwise it will change with every click on the spreadsheet)
7. Sort entire patient population by this new random number

8. Work down the list row by row, starting with row 1 until the number of records in the sample is met for submission (at least 60 patients per clinic, per measure)
9. If a patient meets one of the accepted exclusions, note this on the exclusions spreadsheet and keep working down the list. Use oversample records following the last record/row of the original sample. For example, if 60 records will be submitted and exclusions were found in the first 60 records/rows, use patients from rows 61, 62, and so forth to replace the excluded records.

Paper List Sample Selection:
For paper-generated lists, complete the following steps:

1. Start with a list that has patients sorted by some unique patient related variable.
a. Identifying number like a medical record number [MRN] or chart number is ideal.
b. Sorting alphabetically is the least desirable in terms of randomness, however, this may be used when there is no other alternative.
2. Select every Nth patient for the number of patients that will be reported.
a. N should equal the clinic site's total population divided by the number of patients that will be submitted (if needed, round down to the nearest whole number). Highlight or mark every Nth patient on the list. This is the sample.
b. Example: If a clinic site has 600 diabetes patients and 60 patients will be submitted, divide 600/60 = 10. Select every 10th patient on the list.
3. If a patient meets one of the accepted exclusions, note this on the data collection form and exclusions spreadsheet and select the very next patient on the list (just below the excluded patient).

Missing records: If a record in the sample is not available or "missing," do not exclude this record. Either locate the record and complete the data collection, or include the record and leave the data fields blank if the record cannot be located.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
An excel template with formatted columns for data fields is provided. Many medical groups extract the information from their EMR. Registries can be used as a source of information to create the data file; however groups must ensure that all of their eligible patients are included. Paper abstraction forms are provided for those clinics who wish to use them as an interim step to creating their data file. All data is uploaded in electronic format (.csv file) to a HIPAA secure, encrypted and password protected data portal.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL www.mncm.org/site/?p=resources

2a.29-31 Data dictionary/code table web page URL or attachment: URL www.mncm.org/site/?p=resources

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Group, Clinicians: Other Clinic site location

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

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO), Other Cardiologist

TESTING/ANALYSIS

2b. Reliability testing

2b
C☐
P☐
M☐
N☐

2b.1 Data/sample *(description of data/sample and size)***:** In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for

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

rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data:

Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)*:
For 2009 dates of service reported in 2010, 128 medical groups representing 573 clinics in Minnesota and neighboring states submitted data to MN Community Measurement for the Optimal Vascular Care measure rate calculation. These clinics represented 95,791 patients. The number of patients with detailed information submitted was 63,241. A total of 79% of the clinics submitted their full population of patients with IVD; 21% submitted a sample of patients with a minimum of 60 patients per clinic site. Reasons for sampling include clinics with paper charts or clinics with an EMR currently without the capability or resources to design reports to query all needed elements from their EMR system. Aside from large sample size, other components that contribute to the reliability (consistency) include the following:
* Detailed data specifications and instructions for medical groups at www.mncm.org/site/?p=resources
* Denominator certification process; all must have their methods for identifying the population approved prior to any data collection.
* Field warnings and errors programming that occurs on file upload
* Numerator compliance calculated from raw data submitted based on programming; medical groups are not determining their own numerator cases nor calculating their own outcome rates.
* Evaluation of each clinic´s rate and eligible patient volumes for discrepancies from the prior year.
* Prior to conducting any validation audit, auditors must complete a review of the current measure specifications and pass an IRR (inter-rater reliability) test.
* Extensive audit processes for data submission. After data submission, in person validation audits are conducted comparing the submission to the patient´s medical record using NCQA´s 8 and 30 rule for audit requiring a 90% accuracy rate. Audits are conducted in the following instances: 1) a random sample of clinics with prior successful submission, 2) for all groups who are new to the submission process, 3) a group who has had a change in system or process (e.g., went from paper charts to EMR) since the last submission or 4) any group with a history of prior unsuccessful audit.
* Readily available support for questions, direct email link for assistance at support@mncm.org.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Data submitted to the MNCM data portal for rate calculation is consistent and accurately reflects the data in the patient's medical record. Through the upfront denominator certification process we ensure that all groups are identifying the population in the same way during the same time frame. Groups that cannot comply with the measurement specifications are not allowed to submit data but encouraged to consider future submission when able to comply. Post submission validation processes ensure that the data submitted is that which is reflected in the patient's medical record.

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

2010 Validation Audit Results:
Of the 128 medical groups submitting data in 2010, 17 groups initially failed the audit and remedy plans were developed. All 17 groups resubmitted and passed subsequent audit.
Types of Errors Found in Validation Audits: BP was not most recent, EMR did not pull the correct date or value, ASA date could not be validated, ASA date not reported, LDL date not reported or more recent date found, and Tobacco status was not correct.
A study was conducted in 2007 comparing the two different methods of collecting the data and the subsequent rates. Comparison of rates and confidence intervals obtained by health plan sampling versus data submitted directly by the medical groups demonstrated a high rate of consistency between these two techniques. For 20 of the 22 medical groups, all rates calculated fell within both confidence intervals.
According to a recent publication, "Availability of Data for Measuring Physician Quality Performance" [Scholle, SH., Am Journal of Managed Care Jan 2009] methods proposed by NCQA to assess "reliability" were applied to our data and demonstrated that all of our current data submission by clinic site location achieves values higher than the recommended value of 0.7.

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)*: In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*:
Content validity is addressed in several ways. Potential new measures are researched for impact and opportunity and presented to our Measurement and Reporting Committee prior to development. We convene expert panels for their input and consensus (face and content validity) and test the data collection/ submission processes prior to wide scale implementation. There is consensus among our expert workgroup that the target components reflect a quality of care that will benefit patients in terms of reducing the risk of future complications.
All measures used, changed and developed by MN Community Measurement go through formal approval processes with our Measurement and Reporting Committee (has representatives from providers, health plans, data experts and consumers) and our Board of Directors.
Validity (strength of conclusions):
The goal of collecting these intermediate physiological and biochemical outcomes is to prevent further disease and disability in the future. A direct causality has not been established between these intermediate outcomes and the actual development, avoidance or delay of complications, however providers across the state believe that managing these variables will significantly impact long term outcomes (refer to ICSI guidelines).

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

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

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
Patients with IVD in our state have benefited from the increased focus on measurement, achievement of targets and transparency of information via public reporting. Currently 34% are achieving all four targets, this equates to 21,589 individuals who have reduced their future risk of heart attack and stroke. There is a wide range of rates among clinics, demonstrating opportunity for continued improvement. The top performer in the state (of reportable clinics) is at 68% of their patients meeting all four optimal care components, while some clinics are below 1%. The comparative average for all providers is based on the overall average with a large number of patients used in calculating that average (n = 95,791 patients in 2010). ICSI guidelines support the components of the all or none composite measure and there is consensus among our expert workgroup that the target components reflect a quality of care that will benefit patients in terms of reducing heart attack and stroke risk.

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
It is the intent to exclude patients for whom the achievement of targets of control would be contraindicated and those patients who are not established to a provider´s practice.
Exclusions are allowed for:
* Patients who expire during the measurement year
* Patients with less than 2 visits with IVD codes over the last 2 years
* Patients who are less than age 18 or more than age 75
* Patients who are permanent nursing home residents or enrolled in hospice during the measurement year.
Expert opinion is that these patients are either unable to participate in self management necessary to achieve optimally managed targets, or in the case of the terminally ill, not appropriate to be focusing on these physiological targets.
* Patients who are coded in error

2d.2 Citations for Evidence:
Institute for Clinical Systems Improvement (ICSI)
ICSI Stable Coronary Artery Disease April 2009
www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/coronary_artery_disease/coronary_artery_disease__stable__3.htl
ICSI Lipid Management in Adults October 2009
http://www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/lipid_management_3/lipid_management_in_adults__4.html
ICSI Hypertension Diagnosis and Treatment October 2008
www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/hypertension_4/hypertension_diagnosis_and_treatment__11.html
ICSI Preventive Services for Adults September 2010
http://www.icsi.org/guidelines_and_more/gl_os_prot/preventive_health_maintenance/preventive_services_for_adults/preventive_services_for_adults__11.html
NCQA HEDIS Technical Specifications 2010 Cholesterol Management for Patients with Cardiovascular Conditions

2d.3 Data/sample *(description of data/sample and size)*: In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical

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

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

groups that submitted data ranged from one-physician practices to medical groups with more than 2700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

In addition to the denominator certification process that describes how groups excluded patients, we asked groups to record all the individual patients that they excluded and the reasons for the exclusions. Groups submitted a list of excluded patients to MNCM. The total number of exclusions submitted (n = 1,403) in 2010 was 2.2% of the number of patients submitted (1,403/63,241). Clinics that submitted excluded patients most often manually documented exclusions upon record review. Some clinics with an EMR were also able to submit patients that they were able to filter out of the patient population (e.g., deceased patients).

2d.4 **Analytic Method** *(type analysis & rationale)*:
If a clinic elected to take allowable exclusions, they were required to submit a list of excluded patients along with the type of exclusion per patient. MNCM conducted a review of all exclusions taken to validate that only allowable exclusions were taken and to identify the number of exclusions by type.

2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*:
The frequency of the use of the exclusions under study was 2.2% of the number of patients submitted (1,403/63,241).
Medical group utilization of exclusions: 77 of 128 (60%) of groups submitted exclusions.

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*: In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

Analysis included examining the difference between unadjusted and risk adjusted rates and the ranking impact for the top 15 clinic sites representing 1,746 patients.

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

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NA ☐

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

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

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. 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.

2e.3 Testing Results *(risk model performance metrics)*:
For 2010 (2009 dates of service), 573 clinics in Minnesota and neighboring states (border clinics) submitted data for patients with IVD. These clinics represented 95,791 patients. 79% of the clinics submitted full population data; 21% submitted random samples no less than 60 records per clinic site. The total number of patients submitted was 63,241. For clinics that submitted a sample, reported rates are weighted against the clinic's full eligible population of patients with IVD.
Analysis included examining the difference between unadjusted and risk adjusted rates and the ranking impact for the top 15 clinic sites representing 1,746 patients. (Please refer to the table below). Ultimately, the overall ranking of the top 15 clinics does change, but in general the same sites remain in the top 15 with all of the top 10 clinics maintaining a ranking in the top 15.

Column 1: Unadjusted Ranking
Column 2: Risk Adjusted Ranking
Column 3: Unadjusted Rate
Column 4: Risk Adjusted Rate
Column 5: # Patients
Column 6: Clinic

1	1	68.3%	67.2%	60	A
2	2	65.8%	63.2%	38	B
6	3	59.9%	59.8%	152	C
3	4	60.8%	59.7%	204	D
8	5	58.3%	59.6%	60	E
5	6	60.0%	58.7%	30	F
9	7	58.0%	58.0%	174	G
10	8	57.9%	57.9%	399	H
7	9	59.6%	57.5%	104	I
4	10	60.6%	57.3%	66	J
13	11	56.5%	56.8%	154	K
11	12	57.1%	56.3%	70	L
14	13	56.1%	55.6%	41	M
17	14	55.0%	54.6%	60	N
19	15	54.5%	54.3%	134	O

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: Measure has a risk adjustment method.

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

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

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*:
Outcome results are displayed on the public website MN HealthScores www.mnhealthscores.org and can be ranked in order of performance or by the name of the clinic. The most significant point for comparison is the overall experiential average that is calculated based on over 63,241 patients submitted every year to provide an annually updated weighted average that representing over 95,791 patients. Additionally, results for up to three clinics can be compared and used by the consumer to choose a clinic with excellent outcome rates or by a provider to better understand successes or opportunities for improvement. Providers have additional analytical capabilities within the HIPAA secure data portal for understanding the results of their own data. On the public website, current and historical weighted rates are available and compared to the state average. Rates are also stratified by the individual component of the outcome measure, (e.g. within this IVD measure who is doing the best at managing LDL levels?) Upper and lower confidence limits are calculated for each clinic site based on the eligible population and the number of patients submitted. In our annual Health Care Quality Report (located at http://www.mncm.org/site/?page=our_work&view=2 page 20) clinics with high performers are highlighted. High performers are defined as clinics with rates and confidence intervals fully above the overall clinic average.

2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
For 2010 (2009 dates of service), 33.8% of the patients met all four component targets in the composite measure and were considered optimally managed. This rate is a weighted average of the total population of patients for clinics submitting data (Total Population = 95,751, Submitted = 63,241). 79% of the clinics submitted full population data, the remaining clinics provided a random sample. Of the clinics that were reportable (patient n >= 30), there was a wide range of variability with the lowest scoring clinic at 1.7% and the highest scoring clinic at 68.3%.

The trends for this measure have remained relatively unchanged:
2008 (2007 dates of service) = 33%
2000 (2008 dates of service) = 34%
2010 (2009 dates of service) = 34%

Percentage of Clinics within each Optimal Rate Range (reportable clinics)
0%-9.9% 4.4%
10%-19.9% 14.3%
20%-29.9% 21.9%
30%-39.9% 28.2%
40%-49.9% 22.2%
50%-59.9% 7.9%
60%-69.9% 1.2%

Individual rates of the components are as follows:
LDL <100 = 64%
Blood Pressure <130/80 = 58% *
Daily Aspirin Use = 92%

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

Tobacco Non-user = 81%

* Note for Blood Pressure: Historically and in currently reported data, the target was <130/80 for all IVD patients. For 2011 reporting (2010 dates of service) the target will be modified to <140/90 for IVD patients with a co-morbidity of diabetes and <130/80 for all other IVD patients.

Mean: 32.4%
Median: 33.3%
Standard Deviation: 0.13063 (13.1%)
Min: 1.7%
Max: 68.3%
(reflects reportable clinics, patient n >= 30)

Publicly reported data with clinic level rates is available on the MN HealthScores website www.mnhealthscores.org. Additionally, for more detailed information including highlights of top performers, breakdown by clinic site with confidence intervals please refer to our Health Care Quality Report posted on our corporate website at: www.mncm.org/site/?page=our_work&view=2

2g. Comparability of Multiple Data Sources/Methods

2g.1 **Data/sample** *(description of data/sample and size)*: Multiple data sources are not used. The data source for this information is the patient´s medical record. No other sources of information are applicable (e.g., is not a claims based measure as lab values and blood pressure values are needed). Information can be obtained either from a query of the electronic medical record or via chart abstraction. If data is stored in a registry, the registry must include all eligible patients and must match the source information (the patient's medical record).

2g.2 **Analytic Method** *(type of analysis & rationale)*:
n/a

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

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NA ☐

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

2h. Disparities in Care

2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The IVD population is not currently stratified when publicly reported on our 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
Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID
Date of birth: (MM/DD/YYYY)
Race/ethnicity: from list of MNCM-designated codes
Primary language: from list of MNCM-designated codes
Country of origin: from list of MNCM-designated codes
Zip code: 5-digit zip code of patient
Gender: M (male), F (female), U (unknown)
Co-morbidity of diabetes: 1 (yes), 2 (no)
Co-morbidity of depression: 1 (yes), 2 (no)

2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**
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
Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID
Date of birth: (MM/DD/YYYY)

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NA ☐

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

Race/ethnicity: from list of MNCM-designated codes
Primary language: from list of MNCM-designated codes
Country of origin: from list of MNCM-designated codes
Zip code: 5-digit zip code of patient
Gender: M (male), F (female), U (unknown)
Co-morbidity of diabetes: 1 (yes), 2 (no)
Co-morbidity of depression: 1 (yes), 2 (no)

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

2

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

2
C ☐ **P** ☐ **M** ☐ **N** ☐

3. USABILITY

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

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 Current Use: In use

3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:**
The optimal vascular care measure rates are publicly reported by MN Community Measurement on their consumer website located at the MN HealthScores Website at www.mnhealthscores.org.
MN Community Measurement is a collaborative effort in our community among those who believe that you cannot improve what you don´t measure. Our collaborative includes medical groups, clinics, physicians, hospitals, health plans, employers, consumer representatives and quality improvement organizations. These stakeholders support the notion that greater transparency in our health care system will lead to better health outcomes for the people of Minnesota. MN Community Measurement´s mission to accelerate the improvement of health by publicly reporting health care information is having a positive effect on the health care provided in Minnesota. For more information please visit our corporate website at www.mncm.org.

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
Publicly reported data is used by MN Bridges to Excellence for P4P programs and additionally used by Blue Cross & Blue Shield of MN, HealthPartners and Medica, (largest health plans in MN) within their contractual agreements with providers. Beginning in 2010, this measure was part of the Minnesota Statewide Quality Reporting & Measurement System, which will require participation and data submission by all physician clinics in the state. Use of data for quality improvement efforts is encouraged and results reporting within the data portal assist groups in understanding potential opportunity within each of the components by displaying component results as compared to the overall rates. Additionally there is a compare function built into the public reporting website so that consumers (or providers) can pick clinics to be compared.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)***:** In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample.

3a
C ☐ **P** ☐ **M** ☐ **N** ☐

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

Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

Consumer: In June of 2007, a series of three consumer focus groups were interviewed (28 individuals) to provide feedback about our old website. A new, enhanced website was launched in 2009 and additional feedback was sought from a focus group (5 individuals)
Providers: August 2008 and August 2009 (102 respondents)
Direct Data Submission Users: July 2009 (96 respondents)
Medical Groups: April 2010 (126 respondents)

3a.5 Methods *(e.g., focus group, survey, QI project)*:
Focus groups of consumers for usability of the website.
Informal physician feedback about QI utility and functionality within the HIPAA secure data portal.
Medical Group/ Provider Survey
Direct Data Submission Users Survey

3a.6 Results *(qualitative and/or quantitative results and conclusions)*:
Consumer: In June of 2007, a series of three consumer focus groups were interviewed (28 individuals) to provide feedback about our old website. Some interesting feedback was obtained about our composite measures: accept responsibility for their own health outcomes, health care quality is not uniform across sites, awareness of the website is low, value having the information available during open enrollment and that the website is fairly easy to use. A new, enhanced website was launched in 2009 and additional feedback was sought from a focus group (5 individuals) that reacted positively about the new search and compare capabilities.
Providers: August 2008- Physicians were involved in the data portal redesign of the results display in terms of what additional information would be useful to them in using the data for quality improvement efforts. Providers liked the enhancements, display of the breakdown of the individual components and ability to download their own group's specific patient level data for use in further analysis.

Medical Groups: (includes medical directors, clinic administrators, quality improvement, and data analysts)
August 2009- Survey to medical groups with 102 respondents
* 65% feel that MNCM is selecting measures that drive the most important improvement in health care
* 59% MNCM is accelerating the improvement of care by publicly reporting information
* 67% have visited the new public website MNHealthScores and 74% the corporate website
* 72% participate in direct data submission, an additional 20% plan to participate in 2010. The most frequent reason cited for not participating was lack of an EMR.
* 35% of respondents would like more input into the measurement development process. This is an area we are addressing by including a public comment period for new measures after specs are developed and prior to pilot/ implementation.
Direct Data Submission Users: Survey July 2009 (96 respondents)

Ratings of Top Two Categories (e.g. Good and Excellent or Helpful or Very Helpful):
* 71% rating for the direct data submission guide; overall
* 77% guide instructions for identifying population
* 78.5% guide instructions for sampling procedures
* 84.3% guide instructions for data submission process
April 2010 – Survey to medical groups with 126 respondents.
*52% feel that MNCM is selecting measures that drive the most important improvement in health care.
*48% feel that MNCM is accelerating the improvement of health by publicly reporting health care information.
39% of respondents visit MN HealthScores occasionally or frequently and 45% of respondents visit MNCM's corporate site occasionally or frequently.

Feedback from medical groups included having more input into the measure development process and to receive increased communication about MNCM's submission timelines. A detailed 18-month DDS planning calendar has already been developed for medical group use and more educational webinars detailing the DDS process steps are in the plans for this fall. Medical group involvement in the measure development process (including input from groups in greater Minnesota) continues to grow as new measures are developed and workgroups formed.

76% of survey respondents participated in direct data submission (DDS) during 2010.
Ratings of Top Two Categories (e.g. Good and Excellent or Helpful or Very Helpful):
*80% rating for the overall guide for Optimal Diabetes Care and Optimal Vascular Care.
* 82% rating for instructions on identifying a medical group's patient population (denominator)
* 84% rating for instructions on selecting a sample
* 81% rating for the abstraction/field specifications

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

3b.1 **NQF # and Title of similar or related measures:**
There are other similar measures that address three of the four components separately, but no measure exists that is a composite outcome measure. NQF # 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic (NCQA) NQF # 0073 IVD: Blood Pressure Management (NCQA) NQF # 0075 IVD: Complete Lipid Profile and LDL Control <100 (NCQA)

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 **Are the measure specifications harmonized? If not, why?**
Yes, this IVD measure and its targets are aligned with the goals of NCQA´s Heart Stroke Recognition Program: The Heart Stroke Recognition Program (HSRP) assesses key quality performance measures that are based on AHA/ASA and American college of Cardiology guidelines for secondary prevention of cardiovascular disease and stroke. Program measures include:
Blood pressure control
Complete lipid profile
Cholesterol control
Use of aspirin or another antithrombotic
Smoking status and cessation advice or treatment
HSRP Recognition provides assurance that physicians are providing high quality, evidenced –based care for their CVD and stroke patients.

Additionally, MNCM uses the HEDIS CMC (Cholesterol Management for Patients With Cardiovascular Conditions) as a resource for our measurement denominator definitions for ICD-9 codes and other relevant definitions as applicable to a medical group submitting data versus health plan claims data. (e.g. medical groups do not have the capability to identify continuously enrolled patients within a health plan)

3b
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NA ☐

3c. Distinctive or Additive Value
3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:**
This measure provides added value as patients achieving control or compliance in all four components (blood

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

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

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

pressure, lipids, tobacco non-user and daily aspirin) are more likely to significantly reduce their risk of complications, co-morbidities or catastrophic events as compared to patients with only one component in control. Providers have embraced the challenge of improving all of these variables and demonstrated significant increases in their outcome scores since the measure was first launched. 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** There are other similar measures that address three of the four components separately, but no measure exists that is a composite outcome measure. NQF # 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic (NCQA) NQF # 0073 IVD: Blood Pressure Management (NCQA) NQF # 0075 IVD: Complete Lipid Profile and LDL Control <100 (NCQA)	N☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Evaluation Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA** ☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** MN Community Measurement has modeled the direct data submission to minimize inaccuracies, errors and unintended consequences. All groups participating sign a terms of use agreement that delineates the group's responsibilities for submission of data and consequences for not participating in good faith. Additionally all groups sign a Business Associate Agreement that outlines the use of the data. Denominator certification prior to any data collection ensures that groups are following the specifications and correctly identifying their population and serves as a point of correction prior to the expenditure of resources for data collection.	**4d** **C☐** **P☐** **M☐** **N☐**

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

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

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

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

Groups provide documentation of cases that are excluded and this is reviewed by MNCM staff prior to approval of the data submission. Extensive audit processes also support the data's accuracy. After data submission, in person validation audits are conducted comparing the submission to the patient´s medical record using NCQA´s 8 and 30 rule for audit requiring a 90% accuracy rate. Groups are only allowed three patient records with error out of 30 reviewed in order to achieve 90%. Audits are conducted in the following instances: 1) a random sample of clinics with prior successful submission, 2) for all groups who are new to the submission process, 3) a group who has had a change in system or process (e.g. went from paper charts to EMR) since the last submission or 4) any group with a history of prior unsuccessful audit. It has been our experience that the post submission audits have identified both issues with data extraction programming from an EMR and abstraction errors when data is collected from the chart. Groups have been amenable to remedy plans, resubmission and re-audit. Results of our audit in 2010 are as follows:
Of the 128 medical groups submitting data in 2010, 17 groups initially failed the audit and remedy plans were developed. All 17 groups resubmitted and passed subsequent audit.
Types of Errors Found in Validation Audits: BP was not most recent, EMR did not pull the correct date or value, ASA date could not be validated, ASA date not reported, LDL date not reported or more recent date found, Tobacco status was not correct.

4e. Data Collection Strategy/Implementation

4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:
Over the last three years we have learned the following:
1. Data Submission- Providing data collection software for medical groups wishing to submit data was not always the best and most efficient way of collecting data. As electronic health records use becomes more pervasive in our state, providing templates of data file submissions proved to be more efficient.
2. Specifications- Detailed specifications with instructions on how to handle most situations (e.g. detailed instructions on blood pressure values) has been valuable to medical groups, increased data accuracy and resulted in 98% of groups submitting data successfully.
3. Audit- Audit methods have ensured the accuracy of our data and we are able to successfully compare providers because everyone is pulling their data the same way and subject to the same rules.
4. Confidentiality- Patient confidentiality has been addressed by numerous mechanisms. MNCM only receives the patient level information needed to calculate the rates, determine eligibility for inclusion in the measure and support the administration of pay for performance programs. The PHI submitted is minimal and the data is protected by 1) password protection with password only available to the medical group submitting data, 2) file upload process is encrypted as data is transferred and 3) Data is stored on a separate secure server and meets all HIPAA protection rules.
5. Electronic Medical Record- It is easier for groups that have an electronic medical record to submit data and to submit their full population of patients, however many groups with paper chart systems can successfully submit their sample.
6. Acceptance of Data- Vast improvement in terms of sample sizes and timeliness of the data submitted by medical groups six weeks after the end of the measurement year as compared to prior method of health plan's samples and the results over a year old. Providers are more accepting of the results as compared to previous methods of pooling health plan samples.
7. Data Collection Burden- We have learned that for additional future measures we will need to stagger the data collection time frames and submission deadlines as to not burden the medical groups in terms of abstraction/ extraction (e.g. can't always have a measurement period Jan 1st to Dec 31st reported the second week of February, may need to consider July 1st to June 30th with data submission in August)
8. Health Plans: pay for performance and the inclusion of measures within contracts significantly impacts the number of groups participating in each measure (Diabetes, Ischemic Vascular, and Depression)

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*)**:**
Medical Groups: There are no fees charged to medical groups to submit their data to MNCM. Data collection costs (staff time to either write an extract program from EMR or staff time to abstract a sample of patient data from charts) are absorbed by the medical groups submitting data. For clinics that are abstracting from charts, it generally takes less than eight hours to abstract information for a composite measure for 60 patients. Time spent can often be dependent on the quality and completeness of the record.
Administrative (Costs to MNCM): Costs are associated with staffing. Currently, there is one full time project

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

manager and one part time project coordinator dedicated to the direct data submission project and services for validation audits are contracted with independent auditors during a three-month period each year. Responsibilities include creation and annual update of the direct data submission guide, recommendations for data portal enhancements, communication to users, denominator certification, measure review with auditors for validation, availability for all questions & problems related to specs and submission, planning and performing some of the validation audits and approving data for publication.
It is estimated that the startup costs for the development of our data portal was approximately $25,000 for both the diabetes and ischemic vascular composite measures.

4e.3 **Evidence for costs:**
MNCM contracts with portal vendor (historical) and budget.
Staff's experience with data collection at numerous clinic sites.

4e.4 **Business case documentation:** Prior to implementing the direct data submission process for the composite measure for IVD, MN Community Measurement and it stakeholders knew there was great variability in the care and management that was being provided to patients and preliminary results for a composite measure demonstrated low overall rates and significant room for improvement. Groups were already used to collecting and reporting this information at a summary level to one of the state's major health plans. As the process moved towards direct data submission, information was more acceptable to the providers in terms of how the data was collected, opportunity to submit full population to better reflect true rates, timeliness and availability of the data for internal QI processes.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
MN Community Measurement, 3433 Broadway Street NE, Suite 455, Minneapolis, Minnesota, 55413

Co.2 **Point of Contact**
Anne, Snowden, MPH, CPHQ, snowden@mncm.org, 612-454-4811-

Measure Developer If different from Measure Steward
Co.3 **Organization**
MN Community Measurement, 3433 Broadway Street NE, Suite 455, Minneapolis, Minnesota, 55413

Co.4 **Point of Contact**
Anne, Snowden, MPH, CPHQ, snowden@mncm.org, 612-454-4811-

Co.5 **Submitter If different from Measure Steward POC**
Sandy, Larsen, larsen@mncm.org, 612-454-4818-, MN Community Measurement

Co.6 **Additional organizations that sponsored/participated in measure development**
Upon the recommendation of MNCM's Measurement and Reporting Committee to address and make changes to the blood pressure numerator logic for the current measurement year (2010) using an expedited process after ICSI

Diabetes guidelines were revised, a technical advisory group was convened virtually via email to review initial recommendations for changes and to provide expertise and feedback for changes to the blood pressure component (affecting the Optimal Diabetes Care and Optimal Vascular Care measures). Workgroup included:
Beth Averbeck, MD HeathPartners
Rich Bergenstal, MD International Diabetes Center Park Nicollet
Barry Bershow, MD, Fairview Health Services
John Fredrick, MD Preferred One
Diane Mayberry, MN Community Measurement
Victor Montori, MD Mayo Clinic
Mark Nyman, MD Mayo Clinic
Gene Ollila, MD Allina Medical Clinic
Collette Pitzen, MN Community Measurement
Kari Retzer, ICSI Facilitator for Diabetes Guideline
JoAnn Sperl-Hillen, MD HealthPartners
Linda Walling, MD, HealthEast

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
Upon the recommendation of MNCM's Measurement and Reporting Committee to address and make changes to the blood pressure numerator logic for the current measurement year (2010) using an expedited process after ICSI Diabetes guidelines were revised, a technical advisory group was convened virtually via email to review initial recommendations for changes and to provide expertise and feedback for changes to the blood pressure component (affecting the Optimal Diabetes Care and Optimal Vascular Care measures). Workgroup included:
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Kari Retzer, ICSI Facilitator for Diabetes Guideline
JoAnn Sperl-Hillen, MD HealthPartners
Linda Walling, MD, HealthEast

Ad.2 **If adapted, provide name of original measure:** CAD: optimally managed modifiable risk
Ad.3-5 **If adapted, provide original specifications URL or attachment** Attachment HP CAD Measure - NQF document-634242067290696795.pdf

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2002
Ad.7 **Month and Year of most recent revision:** 10, 2010
Ad.8 **What is your frequency for review/update of this measure?** Annual review
Ad.9 **When is the next scheduled review/update for this measure?** 07, 2011

Ad.10 **Copyright statement/disclaimers:**

Ad.11 -13 **Additional Information web page URL or attachment:**

Date of Submission (*MM/DD/YY*)**:** 11/01/2010

Page 5: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

MN Community Measurement
Methodology for Case Mix Risk Adjustment of Clinic Level Results
Optimal Diabetes Care Measure and Optimal Vascular Care Measure

Background and Evolution of 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 use of the risk adjusted measures overall, especially for public reporting for consumers on our MN HealthScores website. The group agreed that risk adjustment would be more beneficial for tiering and incentive based programs and that there was value in 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 provide 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).

Case Mix Risk Adjustment:

Risk adjustments for these measures are 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 diabetes or 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.

Example of Case Mix Risk Adjustment Methodology: (Fictitious values)

Step One: Unadjusted Rates and Patient Numbers According to Payer Types

Clinic 1	Commercial	MN Healthcare Programs plus Self-pay/Uninsured	Medicare	Total
# of patients	250	50	100	400
# of patients meeting measure	163	23	55	241
% meeting measure	65.2%	46.0%	55.0%	**60.3%**
% of patients in payer type	62.5%	12.5%	25.0%	100.0%

Step Two: Calculate the Statewide Average Payer Mix

Statewide Distribution	Commercial	MN Healthcare Programs plus Self-pay/Uninsured	Medicare	Total
% distribution of patients	55.0%	29.0%	16.0%	100.0%

Step Three: Adjust Rates to Statewide Average Payer Mix

Clinic 1	Commercial	MN Healthcare Programs plus Self-pay/Uninsured	Medicare	Total
Adjusted # of patients	220	116	64	400
Adjusted # of patients meeting measure	143	53	35	231
Adjusted % meeting measure	65.0%	45.7%	54.7%	**57.8%**

Testing the Model: Diabetes Population Results

For 2009 dates of service, 572 clinics in Minnesota and neighboring states (border clinics) submitted data for patients with diabetes. These clinics represented 216,229 patients, and it is estimated that this represents 95% of diabetics in the state of MN. 65% of the clinics submitted full population data; the remainder submitted random samples no less than 60 records per clinic site. The total number of patients submitted was 140,884. For clinics that submitted a sample, reported rates are weighted against the clinic's full eligible population of diabetic patients.

Analysis included examining the difference between unadjusted and risk adjusted rates and the ranking impact for the top 15 clinic sites representing 5,303 patients. (Please refer to the table below). Ultimately, the overall ranking of the top 15 clinics does change, but in general the same sites remain in the top 15 with all of the top 10 clinics maintaining a ranking in the top 15.

Top 15 Clinic Rankings - Diabetes Measure (2009 DOS)

Before and After Risk Adjustment

Unadjusted Ranking	Risk Adjusted Ranking	Unadjusted Rate	Risk Adjusted Rate	Patients	Clinic
4	1	56.8%	57.2%	338	A
3	2	58.7%	56.6%	75	B
2	3	60.0%	54.6%	60	C
6	4	51.5%	51.3%	410	D
1	5	60.8%	51.2%	51	E
8	6	49.9%	49.2%	1053	F
11	7	48.5%	48.6%	171	G
5	8	53.3%	47.8%	60	H
9	9	49.6%	47.6%	278	I
7	10	50.0%	47.0%	60	J
13	11	47.1%	47.0%	563	K
14	12	46.8%	46.6%	419	L
10	13	48.6%	46.3%	477	M
17	14	46.3%	46.0%	136	N
16	15	46.4%	45.9%	1152	O

Testing the Model: Vascular Population Results

For 2009 dates of service, 573 clinics in Minnesota and neighboring states (border clinics) submitted data for patients with ischemic vascular disease (IVD). These clinics represented 95,791 patients. 66% of the clinics submitted full population data; the remainder submitted random samples no less than 60 records per clinic site. The total number of patients submitted was 63,241. For clinics that submitted a sample, reported rates are weighted against the clinic's full eligible population of diabetic patients.

Analysis included examining the difference between unadjusted and risk adjusted rates and the ranking impact for the top 15 clinic sites representing 1,746 patients. (Please refer to the table below). Ultimately, the overall ranking of the top 15 clinics does change, but in general the same sites remain in the top 15 with all of the top 10 clinics maintaining a ranking in the top 15.

Top 15 Clinic Rankings - Vascular Measure (2009 DOS)
Before and After Risk Adjustment

Unadjusted Ranking	Risk Adjusted Ranking	Unadjusted Rate	Risk Adjusted Rate	Patients	Clinic
1	1	68.3%	67.2%	60	A
2	2	65.8%	63.2%	38	B
6	3	59.9%	59.8%	152	C
3	4	60.8%	59.7%	204	D
8	5	58.3%	59.6%	60	E
5	6	60.0%	58.7%	30	F
9	7	58.0%	58.0%	174	G
10	8	57.9%	57.9%	399	H
7	9	59.6%	57.5%	104	I
4	10	60.6%	57.3%	66	J
13	11	56.5%	56.8%	154	K
11	12	57.1%	56.3%	70	L
14	13	56.1%	55.6%	41	M
17	14	55.0%	54.6%	60	N
19	15	54.5%	54.3%	134	O

HEART DISEASE					
MEASURE	SOURCE	NUMERATOR	DENOMINATOR	EXCLUSIONS	DATA SOURCE
			example ICD-9 CM diagnosis code 640.0x means that a fifth digit is required, but the fifth digit could be any number allowed by the coding manual.		
25. CAD: optimally managed modifiable risk factors	HealthPartners	All members from the denominator who reach treatment targets* for all numerator components: • Low-Density Lipoprotein (LDL) Screening--Coronary artery disease (CAD) population who had an LDL during the measurement year or the year prior to the measurement year with a level less than 100 for the most recent screening • Tobacco Non-User--CAD population with documented non-smoking status • Blood Pressure Control--CAD population whose blood pressure is in control less than 140/90 during the measurement year • Aspirin Usage--CAD population eligible for aspirin use who were on aspirin therapy. *Numerator component target measure may be modified to reflect changing recommendations of treatment targets.	Members between 18 and 75 years of age as of December 31st of the reporting year, who were continually enrolled with not more than 1 month break in coverage and have a diagnosis of coronary artery disease (CAD)* *CAD diagnosis: 410.XX Acute Myocardial Infarction (AMI) 411.XX Post Myocardial Infarction Syndrome 412 Old AMI 413.XX Angina Pectoris 414.0X Coronary Atherosclerosis 414.10 Aneurysm of Heart Wall 414.8 Other Chronic Ischemic Heart Disease (IHD) 414.9 Chronic IHD	**Numerator Exclusion:** Members contraindicated to aspirin therapy are excluded from the "Aspirin Usage" component of the measure. **Denominator Exclusions:** Members can be validly excluded from the sample for the following reasons during the measurement year: member died, resident in nursing home, or hospice. Sampling error member does not have CAD.	Administrative data, medical record.
26. Heart	AMA PCPI/	Patient visits with assessment of current	All patient visits for patients aged	None	EHRS,