THE NATIONAL QUALITY FORUM

COMPOSITE MEASURE SUBMISSION FORM
Version 4.1 January 2010

This form will be used by stewards to submit **composite** measures and by reviewers to evaluate the measures.

Measure Stewards: Check with NQF staff before using this form. Complete all non-shaded areas of the form. All requested information should be entered directly into this form. The information requested is directly related to NQF's composite measure evaluation criteria and will be used by reviewers to determine if the evaluation criteria have been met. The specific relevant subcriteria language is provided in a Word comment within the form and will appear if your cursor is over the highlighted area (or in balloons).

The measure steward has the opportunity to identify and present the information that demonstrates the measure meets the criteria. Additional materials will only be considered supplemental. Do not rely solely on materials provided at URLs or in attached documents to provide measure specifications or to demonstrate meeting the criteria. If supplemental materials are provided, be sure to indicate specific page numbers/ web page locations for the relevant information (web page links preferred).

For questions about completing this form, contact the project director at 202-783-1300. Please email this form to the appropriate contact listed in the corresponding call for measures.

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 #:** 0964 **NQF Project:**
De.1 **Title of Measure:** Therapy with aspirin, P2Y12 inhibitor, and statin at discharge following PCI in eligible patients
De.2 **Brief description of measure** (*including type of score, measure focus, target population, time, e.g., Percentage of adult patients aged 18-75 years receiving one or more HbA1c tests per year*): Patients undergoing PCI who receive prescriptions for all medications (aspirin, P2Y12 and statins) for which they are eligible for at discharge
De.3 **Type of Measure:** ☒ Composite with component measures combined at patient-level (e.g., all-or-none) ☐ Composite with component measures combined at aggregate-level
Select the most relevant priority area(s), quality domain(s), and consumer need(s). De.4 **National Priority Partners Priority Area** ☐ patient and family engagement ☐ population health ☐ safety ☐ care coordination ☐ palliative and end of life care ☐ overuse

De.5 **IOM Quality Domain** ☒ effectiveness ☐ efficiency ☐ equity ☐ patient-centered ☐ safety ☒ timeliness

De.6 **Consumer Care Need** ☒ Getting Better ☒ Living With Illness ☐ 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 agreement (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 any aspects of the measure owned by another entity (e.g., component measures, risk model, code set)?** ☒ Yes A.2 **Measure Steward Agreement** ☒ Signed and Submitted **OR** ☐ Government entity–public domain (If measure steward agreement not signed for non-government entities, do not submit) A.3 **Please check if either of the following apply:** ☐ Proprietary Measure ☐ Proprietary Complex Measure w/fees	**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. B.1 ☒ Yes (If no, do not submit)	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. C.1 **Purpose:** ☒ Public reporting ☒ Internal quality improvement C.2 ☐ Accountability ☐ Accreditation ☐ Payment incentive ☐ Other, describe: (If not intended for both public reporting and quality improvement, do not submit)	**C** Y☐ N☐
D. The requested measure submission information is complete. Composite 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. D.1 **Testing:** ☒ Fully developed and tested (If composite measure not tested, do not submit) D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** ☒ Yes (If no, do not submit) *If there are similar or related measures, be sure to address items 3b and 3c with specific information.* ►**Is all requested information entered into this form?** ☒ Yes (If no, do not submit)	**D** Y☐ N☐
De.7 If component measures of the composite **are aggregate-level measures, all** must be either NQF-endorsed or submitted for consideration for NQF endorsement (*check one*) ☐ All component measures are NQF-endorsed measures ☒ Some or all component measures are not NQF-endorsed and have been submitted using the online measure submission tool (If not, do not submit)	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:	

Comment [KP1]: The individual measures included in the composite or subcomposite measures must be either:
NQF-endorsed;
OR
assessed to have met the individual measure evaluation criteria as the first step in evaluating the composite measure.
(This does not apply to subscales of a scale/instrument that cannot be used independently of the total scale.)

NQF Review #:

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.* (composite measure evaluation criteria)

Eval

(for NQF staff use) **Specific NPP goal**:

1d. Purpose/objective of the Composite

1d.1 Describe the purpose/objective of the composite measure: This measure is intended to assess the extent to which eligible patients receive evidence-based medications that are indicated at hosptial discharge following PCI

1d.2 Describe the quality construct used in developing the composite: This measure focuses on processes of care that are supported by guidelines for optimal care for patients following PCI.

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Comment [KP2]: 1d. The purpose/objective of the composite measure and the construct for quality are clearly described.

1e. Components and conceptual construct for quality

1e.1 Describe how the component measures/items are consistent with and representative of the quality construct: Each of the components of this measure address appropriate medication prescribing at discharge for PCI patients.

Comment [KP3]: 1e. The component items/measures (e.g., types, focus) that are included in the composite are consistent with and representative of the conceptual construct for quality represented by the composite measure. Whether the composite measure development begins with a conceptual construct or a set of measures, the measures included must be conceptually coherent and consistent with the purpose.

If the component measures are combined at the patient level, complete 1a, 1b, and 1c.

If the component measures are combined at the aggregate level, skip to criterion 2, *Scientific Acceptability of Measure Properties* (individual measures are either NQF-endorsed or submitted individually).

1a. High Impact

1a.1 Demonstrated high impact aspect of healthcare (*Select the most relevant*)

☒ affects large numbers ☒ frequently performed procedure ☒ leading cause of morbidity/mortality ☒ high resource use ☒ severity of illness ☐ patient/societal consequences of poor quality
☐ other, describe: **1a.2**

1a.3 Summary of Evidence of High Impact: Cardiovascular disease is the single most common cause of death in the U.S. There are an estimated 64 million people with cardiovascular disease with direct costs totaling over 226 billion dollars in 2004. Estimates of direct costs due to cardiovascular disease are projected to be 503.2 billion dollars in 2010. In 2002, approximately 864,480 deaths were attributable to cardiovascular disease, or 1 in 2.9 deaths in the US. Approximately 1 million PCI procedures are performed annually. 6.1 million hospital discharges listed cardiovascular disease as the primary diagnosis in 2006. In 2004 coronary artherosclerosis attributed to 1.2 million hospital stays, with 44 billion in associated expenses. More than half of hospital stays were due to PCI or cardiac revascularization.

1a.4 Citations for Evidence of High Impact: American Heart Association. Heart disease and stroke statistics- 2010 update: A report of the American Heart Association. Available at:http://circ.ahajournals.org/cgi/content/full/103/24/3019. Accessed October 13, 2010.

1a
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Comment [KP4]: 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).

1b. Opportunity for Improvement

1b.1 Briefly explain benefits (improvements in quality) envisioned by use of this measure: This measure is intended to improve rates of evidence-based medication prescribing for patients following PCI to improve outcomes associated with cardiovascular disease.

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

N	1121
Mean	0.8430
SD	0.1122
100%	1.0000
99%	1.0000
95%	0.9655
90%	0.9511

1b
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Comment [KP5]: 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).

75% Q3 0.9189
50% 0.8646
25% Q1 0.7955
10% 0.7143
5% 0.6455
1% 0.4277
0% Min 0.0000

1b.3 Citations for data on performance gap: Unpublished NCDR data.

1b.4 Summary of Data on disparities by population group: Performance for this measure does not vary significantly based on proportion of white patients, age, gender, or safety net status. See supplemental documention for additional information.

1b.5 Citations for data on Disparities: Unpublished NCDR data.

1c. Evidence-based

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.)* This measure is intended to improve rates of evidence-based medication prescribing for patients following PCI to improve outcomes associated with cardiovascular disease.

1c.2 Type of Evidence *(Check all that apply)*
☐ Cohort study ☒ Evidence-based guideline ☐ Expert opinion ☐ Meta-analysis
☐ Observational study ☐ Randomized controlled trial ☐ Systematic synthesis of research
☐ Other (*Please describe*): **1c.3**

1c.4 Summary of Evidence *as described above for type of measure; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:** On the basis of 12 randomized trials in 18,788 patients with prior infarction, the Antiplatelet Trialists' Collaboration reported a 25% reduction in the risk of recurrent infarction, stroke, or vascular death in patients receiving prolonged antiplatelet therapy (36 fewer events for every 1000 patients treated). No antiplatelet therapy has proved superior to aspirin in this population, and daily doses of aspirin between 80 and 325 mg appear to be effective. These compelling data suggest that all patients recovering from STEMI should, in the absence of contraindications, continue taking aspirin for an indefinite period.

The use of P2Y12 inhibitors after PCI appears to reduce rates of cardiovascular ischemic events. For example, the efficacy of combination antiplatelet therapy (aspirin plus thienopyridine) in patients undergoing urgent and elective stent implantation was demonstrated in the Intracoronary Stenting and Antithrombotic Regimen (ISAR) trial of 517 patients treating with BMS for MI, suboptimal angioplasty, or other high-risk clinical and anatomic features. Patients were randomly assigned to treatment with aspirin plus ticlopidine or aspirin, intravenous heparin, and phenprocoumon after successful stent placement. The primary end point of cardiac death, MI, CABG, or repeat angioplasty occurred in 1.5% of patients assigned to antiplatelet therapy and 6.2% of those assigned to anticoagulant therapy (relative risk 0.25; 95% CI 0.06 to 0.77).
The benefits of long-term treatment with clopidogrel after PCI and the benefit of initiating pretreatment with clopidogrel with a preprocedural loading dose in addition to aspirin therapy were tested in CREDO (Clopidogrel for the Reduction of Events During Observation), a randomized, double-blind, controlled trial of early and sustained dual oral antiplatelet therapy after PCI. In this trial of 2116 patients undergoin PCI from 99 North American centers, the patients received either a loading dose of clopidogrel or placebo, and all patients received clopidogrel thereafter through day 28. In the following 12 months, patients in the loading dose group received clopidogrel and those in the control group received placebo. All patients received aspirin. At 1 year, long-term clopidogrel therapy was associated with a 27% RRR in the combined risk of death, MI, or stroke for an absolute reduction of 3%. Steinhubl et al found 1 year, long-term clopidogrel therapy was associated with a 26.9% relative reduction in the combined risk of death, MI, or stroke (95% confidence interval [CI], 3.9%-44.4%; P=.02; absolute reduction, 3%).

The Atorvastatin Versus Revascularization Treatment (AVERT) trial (298) randomly assigned 341 patients with stable CAD, normal LV function, and class I and/or II angina to PTCA or medical therapy with 80 mg of atorvastatin daily (mean low-density lipoprotein cholesterol equals 77 mg per dL). At 18 months of follow-up, 13% of the medically treated group had ischemic events compared with 21% of the PTCA group (P equals 0.048). Angina relief was greater in those treated with

Comment [KP6]: 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.
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.

1c
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PTCA. Although not statistically different when adjusted for interim analysis, these data suggest that in low-risk patients with stable CAD, aggressive lipid lowering therapy can be as effective as PTCA in reducing ischemic events.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*) Level B: Data derived from a single randomized trial or nonrandomized studies (American College of Cardiology/ American Heart Association TaskForce on Practice Guidelines)
1c.6 Method for rating evidence: The weight of evidence in support of the recommendation is listed as follows:
• 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.7 Summary of Controversy/Contradictory Evidence: N/A

1c.8 Citations for Evidence (*other than guidelines*)
Antithrombotic Trialists' Collaboration. Collaborative meta-analysis of randomised trials of antiplatelet therapy for prevention of death, myocardial infarction, and stroke in high-risk patients. BMJ 2002;324:71-86.

Gutstein DE, Fuster V. Pathophysiologic bases for adjunctive therapies in the treatment and secondary prevention of acute myocardial infarction. Clin Cardiol 1998;21:161-8.

Hennekens CH, Dyken ML, Fuster V. Aspirin as a therapeutic agent in cardiovascular disease: a statement for healthcare professionals from the American Heart Association. Circulation 1997;96:2751-3.

Steinhubl SR, Berger PB, Mann JT, III, et al. Early and sustained dual oral antiplatelet therapy following percutaneous coronary intervention: a randomized controlled trial. JAMA 2002;288: 2411-20.

Mehta SR, Yusuf S, Peters RJ, et al. Effects of pretreatment with clopidogrel and aspirin followed by long-term therapy in patients undergoing percutaneous coronary intervention: the PCI-CURE study. Lancet 2001;358:527-33.
Stone GW, Ellis SG, Cox DA, et al. One-year clinical results with the slow-release, polymer-based, paclitaxel-eluting TAXUS stent: the TAXUS-IV trial. Circulation 2004;109:1942-7.

Holmes DR Jr, Leon MB, Moses JW, et al. Analysis of 1-year clinical outcomes in the SIRIUS trial: a randomized trial of a sirolimus-eluting stent versus a standard stent in patients at high risk for coronary restenosis. Circulation 2004;109:634-40.

Cannon CP, Braunwald E, McCabe CH, et al. Intensive versus moderate lipid lowering with statins after acute coronary syndromes. N Engl J Med 2004;350:1495-504.1c.9

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*) AHA/ACC PCI Guidelines, Focused Update 2007:
3. After PCI, in patients without allergy or increased risk of bleeding, aspirin 162 mg to 325 mg daily should be given for at least 1 month after BMS implantation, 3 months after sirolimus-eluting stent implantation, and 6 months after paclitaxel-eluting stent implantation, after which daily long-term aspirin use should be continued indefinitely at a dose of 75 mg to 162 mg. (Level of Evidence: B)
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ACC/AHA NSTEMI Guidelines 2007:
CLASS I
1. For UA/NSTEMI patients treated medically without stenting, aspirin (75 to 162 mg per day) should be prescribed indefinitely (Level of Evidence: A); clopidogrel (75 mg per day) should be prescribed for at least 1 month (Level of Evidence: A) and ideally for up to 1 year. (Level of Evidence: B) 2. For UA/NSTEMI patients treated with bare-metal stents, aspirin 162 to 325 mg per day should be prescribed for at least 1 month (Level of Evidence: B), then continued indefinitely at a dose of 75 to 162 mg per day (Level of Evidence: A); clopidogrel should be prescribed at a dose of 75 mg per day for a minimum of 1 month and ideally for up to 1 year (unless the patient is at increased risk of bleeding; then it should be given for a minimum of 2 weeks). (Level of Evidence: B)
3. For UA/NSTEMI patients treated with DES, aspirin 162 to 325 mg per day should be prescribed for at least 3 months after sirolimuseluting stent implantation and 6 months after paclitaxel-eluting stent implantation then continued indefinitely at a dose of 75 to 162 mg per day. (Level of Evidence: B) Clopidogrel 75 mg daily should be given for at least 12 months to all post-PCI patients receiving DES. (Level of Evidence: B)
4. Clopidogrel 75 mg daily (preferred) or ticlopidine (in the absence of contraindications) should be given to patients

recovering from UA/NSTEMI when ASA is contraindicated or not tolerated because of hypersensitivity or gastrointestinal intolerance (but with gastroprotective agents such as proton-pump inhibitors). (Level of Evidence: A)
Page: e45

ACC/AHA STEMI Guidelines 2004:
Class I
1. A daily dose of aspirin 75 to 162 mg orally should be given indefinitely to patients recovering from STEMI. (Level of Evidence: A)
2. If true aspirin allergy is present, preferably clopidogrel (75 mg orally per day) or, alternatively, ticlopidine (250 mg orally twice daily) should be substituted. (Level of Evidence: C)
Page: e144
AHA/ACC guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease:
Aspirin/Thienopyridines:
• Start aspirin 75 to 162 mg/d and continue indefinitely in all patients unless contraindicated. I (A)
For patients undergoing coronary artery bypass grafting, aspirin should be started within 48 hours after surgery to reduce saphenous vein graft closure. Dosing regimens ranging from 100 to 325mg/d appear to be efficacious. Doses higher than 162 mg/d can be continued for up to 1 year. I (B)
• Start and continue clopidogrel 75 mg/d in combination with aspirin for up to 12 months in patients after acute coronary syndrome or percutaneous coronary intervention with stent placement (>=1 month for bare metal stent, >=3 months for sirolimus-eluting stent, and >=6 months for paclitaxel-eluting stent). I (B) Patients who have undergone percutaneous coronary intervention with stent placement should initially receive higher-dose aspirin at 325 mg/d for 1 month for bare metal stent, 3 months for sirolimus-eluting stent, and 6 months for paclitaxel-eluting stent. I (B
Page: 2132

P2Y12:
ACC/AHA 2009 Focused Update for PCI:
Class 1
2. The duration of thienopyridine therapy should be as follows: a. In patients receiving a stent (BMS or drug-eluting stent [DES]) during PCI for ACS, clopidogrel 75 mg daily† (27–29) (Level of Evidence: B) or prasugrel 10 mg daily§ (27) (Level of Evidence:
B) should be given for at least 12 months; b. If the risk of morbidity because of bleeding outweighs the anticipated benefit afforded by thienopyridine therapy, earlier discontinuation should be considered. (Level of Evidence: C)
Class 1
3. In patients taking a thienopyridine in whom CABG is planned and can be delayed, it is recommended that the drug be discontinued to allow for dissipation of the antiplatelet effect. (Level of Evidence: C) The period of withdrawal should be at least 5 days in patients receiving clopidogrel (2,30) (Level of Evidence: B) and at least 7 days in patients receiving prasugrel (Level of Evidence: C), unless the need for revascularization and/or the net benefit of the thienopyridine outweighs the potential risks of excess bleeding (31). (Level of Evidence: C)
Page: 2212
ACC/AHA NSTEMI Guidelines 2007:
Class 1:
5. For UA/NSTEMI patients in whom an initial conservative (i.e., noninvasive) strategy is selected clopidogrel (loading dose followed by daily maintenance dose)* should be added to ASA and anticoagulant therapy as soon as possible after admission and administered for at least 1 month (Level of Evidence: A) and ideally up to 1 year. (Level of Evidence: B)
Page: e45

ACC/AHA guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease:
• Start aspirin 75 to 162 mg/d and continue indefinitely in all patients unless contraindicated. I (A)
For patients undergoing coronary artery bypass grafting, aspirin should be started within 48 hours after surgery to reduce saphenous vein graft closure. Dosing regimens ranging from 100 to 325mg/d appear to be efficacious. Doses higher than 162 mg/d can be continued for up to 1 year. I (B)
• Start and continue clopidogrel 75 mg/d in combination with aspirin for up to 12 months in patients after acute coronary syndrome or percutaneous coronary intervention with stent placement (>=1 month for bare metal stent, >=3 months for sirolimus-eluting stent, and >=6 months for paclitaxel-eluting stent). I (B)
Patients who have undergone percutaneous coronary intervention with stent placement should initially receive higher-dose aspirin at 325 mg/d for 1 month for bare metal stent, 3 months for sirolimus-eluting stent, and 6 months for paclitaxel-eluting stent. I (B)
Page: 2132
ACC/AHA STEMI Guidelines 2004:

Class I
1. A daily dose of aspirin 75 to 162 mg orally should be given indefinitely to patients recovering from STEMI. (Level of Evidence:
A)
2. If true aspirin allergy is present, preferably clopidogrel (75 mg orally per day) or, alternatively, ticlopidine (250 mg orally twice daily) should be substituted. (Level of Evidence: C)
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Statins:

ACC/AHA PCI Guidelines (2007 Focused Update):
1. Starting dietary therapy is recommended. Reduce intake of saturated fats (to less than 7% of total calories), trans fatty acids, and cholesterol (to less than 200 mg per day).
A fasting lipid profile should be assessed in all patients and within 24 hours of hospitalization for those with an acute cardiovascular or coronary event. For hospitalized patients, initiation of lipid lowering medication is indicated as recommended below before discharge according to the following schedule:
-LDL-C should be less than 100 mg per dL. -Further reduction of LDL-C to less than 70 mg per dL is reasonable.
-If baseline LDL-C is greater than or equal to 100 mg per dL, LDL-lowering drug therapy should be initiated.
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ACC/AHA NSTEMI Guideline 2007:
CLASS I
b. Hydroxymethyl glutaryl-coenzyme A reductase inhibitors (statins), in the absence of contraindications, regardless of baseline LDL-C and diet modification, should be given to post-UA/ NSTEMI patients, including postrevascularization patients. (Level of Evidence: A)
c. For hospitalized patients, lipid-lowering medications should be initiated before discharge. (Level of Evidence: A)
d. For UA/NSTEMI patients with elevated LDL-C (greater than or equal to 100 mg per dL), cholesterol-lowering therapy should be initiated or intensified to achieve an LDL-C of less than 100 mg per dL. (Level of Evidence: A) Further titration to less than 70 mg per dL is reasonable. (Class IIa, Level of Evidence: A)
e. Therapeutic options to reduce non–HDL-C‡ are recommended, including more intense LDL-C–lowering therapy. (Level of Evidence: B)
Page: e92
ACC/AHA STEMI Guideline 2004:
Class IIa
1. It is reasonable to prescribe drug therapy at hospital discharge to patients with non–HDL-C greater than or equal to 130 mg/dL, with a goal of reducing non–HDL-C to substantially less than 130 mg/dL. (Level of Evidence: B)
2. It is reasonable to prescribe drugs such as niacin or fibrate therapy to raise HDL-C levels in patients with LDL-C less than 100 mg/dL and non–HDL-C less than 130 mg/dL but HDL-C less than 40 mg/dL despite dietary and other nonpharmacological therapy.
Dietary-supplement niacin must not be used as a substitute for prescription niacin, and over-the-counter niacin should be used only if approved and monitored by a physician. (Level of Evidence: B)
3. It is reasonable to add drug therapy with either niacin or a fibrate to diet regardless of LDL and HDL levels when triglyceride levels are greater than 500 mg/dL. In this setting, non–HDL-C (goal substantially less than 130 mg/dL) should be the cholesterol target rather than LDL-C. Dietary-supplement niacin must not be used as a substitute for prescription niacin, and over-thecounter niacin should be used only if approved and monitored by a physician. (Level of Evidence: B)
Page: e141
ACC/AHA Guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease:
Statins:
For lipid management:
Assess fasting lipid profile in all patients, and within 24 hours of hospitalization for those with an acute cardiovascular or coronary event. For hospitalized patients, initiate lipid-lowering medication as recommended below before discharge according to the following schedule:
• LDL-C should be <100 mg/dL I (A), and
• Further reduction of LDL-C to <70 mg/dL is reasonable. IIa (A)
• If baseline LDL-C is >=100 mg/dL, initiate LDL-lowering drug therapy.§ I (A)
• If on-treatment LDL-C is >=100 mg/dL, intensify LDL-lowering drug therapy (may require LDL-lowering drug combination). I (A)
• If baseline LDL-C is 70 to 100 mg/dL, it is reasonable to treat to LDL-C <70 mg/dL. IIa (B)
• If triglycerides are 200 to 499 mg/dL, non-HDL-C should be <130 mg/dL. I (B), and
• Further reduction of non-HDL-C to <100 mg/dL is reasonable. IIa (B)

• Therapeutic options to reduce non-HDL-C are:
-More intense LDL-C–lowering therapy I (B), or
-Niacin (after LDL-C–lowering therapy) IIa (B), or
-Fibrate therapy# (after LDL-C–lowering therapy) IIa (B)
• If triglycerides are >=500 mg/dL#, therapeutic options to prevent pancreatitis are fibrate¶ or niacin before LDL-lowering therapy; and treat LDL-C to goal after triglyceride-lowering therapy. Achieve non-HDL-C <130 mg/dL if possible. I (C)
Page: 2131
NCEP Guideline:
In persons admitted to the hospital for a major coronary event, LDL cholesterol should be measured on admission or within 24 hours. This value can be used for treatment decisions. In general, persons hospitalized for a coronary event or procedure should be discharged on drug therapy if the LDL cholesterol is 130 mg/dL. If the LDL is 100–129 mg/dL, clinical judgment should be used in deciding whether to initiate drug treatment at discharge, recognizing that LDL cholesterol levels begin to decline in the first few hours after an event and are significantly decreased by 24-48 hours and may remain low for many weeks. Thus, the initial LDL cholesterol level obtained in the hospital may be substantially lower than is usual for the patient. Some authorities hold drug therapy should be initiated whenever a patient hospitalized for a CHD-related illness is found to have an LDL cholesterol >100 mg/dL. Initiation of drug therapy at the time of hospital discharge has two advantages. First, at that time patients are particularly motivated to undertake and adhere to risk-lowering interventions; and second, failure to initiate indicated therapy early is one of the causes of a large "treatment gap," because outpatient followup is often less consistent and more fragmented.

1c.10 Clinical Practice Guideline Citation: 1. King SB, III, Smith SC, Jr., Hirshfeld JW, Jr., et al. 2007 focused update of the ACC/AHA/SCAI 2005 guideline update for percutaneous coronary intervention: a report of the American College of Cardiology/American Heart Association Task Force on Practice guidelines. J Am Coll Cardiol. 2008;51:172-209.
2. Anderson JL, Adams CD, Antman EM, et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non-ST-Elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction) developed in collaboration with the American College of Emergency Physicians, the Society for Cardiovascular Angiography and Interventions, and the Society of Thoracic Surgeons endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation and the Society for Academic Emergency Medicine. J Am Coll Cardiol. 2007;50:e1-e157.
3. Antman EM, Anbe DT, Armstrong PW, et al. 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 Patients with Acute Myocardial Infarction). Circulation.2004;110:e82-292.
4. Smith SC, Jr., Allen J, Blair SN, et al. AHA/ACC guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease: 2006 update endorsed by the National Heart, Lung, and Blood Institute. J Am Coll Cardiol. 2006;47:2130-9.

5. National Cholesterol Education Program. Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). NIH Pub. No. 02-5125. Bethesda, MD: National Heart, Lung, and Blood Institute, 2002;284 pages. Guidelines, Related Tools, and Patient Information available at http://www.nhlbi.nih.gov/guidelines/cholesterol/index.htm. Accessed May 15, 2003.
1c.11 National Guideline Clearinghouse or other URL:
Http://circ.ahajournals.org/cgi/content/full/117/2/261#TBL121882081c

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*) Class I: Conditions for which there is evidence for and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.
1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF*)**:** ACC/AHA Taskforce on Practice Guidelines Method:
Indications are categorized as class I, II, or III on the basis of a multifactorial assessment of risk and expected efficacy viewed in the context of current knowledge and the relative strength of this knowledge. These classes summarize the recommendations for procedures or treatments as follows:
Class I: Conditions for which there is evidence for 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. **1c.14 Rationale for using this guideline over others:** This guideline is the most widely recognized professional guideline in the US for cardiovascular medicine in the area of percutaneous coronary intervention 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. (composite measure evaluation criteria)	**Eval**
2a. COMPOSITE MEASURE SPECIFICATIONS	
In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained? **S.1** Do you have a web page where current detailed measure specifications can be obtained? no **S.2** If yes, provide web page URL: 2a. Precisely Specified **2a.0.1 Components of the Composite** (*List the components, i.e., domains/sub-composites, individual measures. If component measures are NQF-endorsed, include NQF measure number*; if not NQF-endorsed, provide date of submission to NQF) 1. Aspirin prescribed at discharge for patients with PCI without contraindications. AND 2. P2Y12 agent (clopidogrel, prasurgel, or ticlopidine) prescribed at discharge for patients with PCI with a stent without contraindications. AND 3. Statin prescribed at discharge for patients with PCI without contraindications.	
If the composite measure cannot be specified with a numerator and denominator, please consult with NQF staff. *If the component measures are combined at the aggregate level, do not include the individual measure specifications below.*	
2a.1 Composite Numerator Statement: Patients who receive all medications for which they are eligible. 1. Aspirin prescribed at discharge (if eligible for aspirin as described in denominator) AND 2. P2Y12 agent (clopidogrel, prasurgel, or ticlopidine) prescribed at discharge (if eligible for P2Y12 as described in denominator) AND 3. Statin prescribed at discharge (if eligible for statin as described in denominator) **2a.2 Numerator Time Window:** 1 year	**2a-specs** **C☐** **P☐** **M☐** **N☐**

Comment [KP7]: 2a. The composite measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. Composite specifications include methods for standardizing scales across component scores, scoring rules (i.e., how the component scores are combined or aggregated), weighting rules (i.e., whether all component scores are given equal or differential weighting when combined into the composite), handling of missing data, and required sample sizes.

2a.3 Numerator Details: Numerator: Count of patients with PCI procedures with

[((ASA =yes) AND (ASA not contraindicated or blinded) AND
((p2Y12=yes) AND (p2Y12 not contraindicated or blinded) AND
(patient with PCI procedure with stents implanted)) AND
((statin=yes) and (statin not contraindicated or blinded))]

AND

[(Discharge status=alive) AND
(Discharge Location=home, extended care facility, nursing home, other)]

2a.4 Composite Denominator Statement:
All patients surviving hospitalization who are eligible to receive any one of the three medication classes:
1) Eligibile for aspirin (ASA): Patients undergoing PCI who do not have a contraindication to aspirin documented
OR
2) Eligibility for P2Y12 agent (clopidogrel, prasugrel, or ticlopidine): Patients undergoing PCI with stenting who do not have a contraindication to P2Y12 agent documented
OR
3) Eligibility for statin therapy: Patients undergoing PCI who do not have a contraindication to statin therapy.

2a.5 Target Population Gender ☒ Female ☒ Male
2a.6 Target Population Age range 18 years of age and older

2a.7 Denominator Time Window: 1 year

2a.8 Denominator Details: Denominator: Count of patients with PCI procedures with

[(ASA not contraindicated or blinded) OR
[((p2Y12 not contraindicated or blinded) AND (patient with PCI procedure with stents implanted)) OR
(statin not contraindicated or blinded)]]

AND

[(Discharge status=alive) AND
(Discharge Location=home, extended care facility, nursing home, other)]

2a.9 Composite Denominator Exclusions: Discharge status of expired; not eligible for aspirin, P2Y12, or statin (contraindicated or blinded to all 3 medications)

2a.10 Denominator Exclusion Details:

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

2a.18 Type of Score: Non-weighted score/composite/scale **2a.19** If "Other", please describe:

2a.20 Interpretation of Score (*Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score*) Better quality = Higher score

2a.42 Method of Scoring/Aggregation: all/any-or-none **2a.43 If "other" scoring method, describe:**

2a.44 Missing Component Scores (*Indicate how missing component scores are handled*): Patients who are eligible for a medication included in the measure but have missing values for the medication are excluded from eligibility for that measure in the same way that patients who are contraindicated or blinded are excluded.

2a.45 Weighting: ☒ **Equal** ☐ **Differential** **2a.46 If differential weighting, describe:**

2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps*)**:**
Denominator: Count of patients with PCI procedures with

[(ASA not contraindicated or blinded) OR
[((p2Y12 not contraindicated or blinded) AND (patient with PCI procedure with stents implanted)) OR
(statin not contraindicated or blinded)]]

AND

[(Discharge status=alive) AND
(Discharge Location=home, extended care facility, nursing home, other)]

Numerator: Count of patients with PCI procedures with

[((ASA =yes) AND (ASA not contraindicated or blinded) AND
((p2Y12=yes) AND (p2Y12 not contraindicated or blinded) AND
(patient with PCI procedure with stents implanted)) AND
((statin=yes) and (statin not contraindicated or blinded))]

AND

[(Discharge status=alive) AND
(Discharge Location=home, extended care facility, nursing home, other)]

2a.22 Describe the method for discriminating performance (*e.g., significance testing*)**:**
Hospital performance for this measure is benchmarked each quarter and annually against hospitals with similar procedural volume, as well as against the CathPCI Registry aggregate. These benchmarks identify superior performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes.

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

2a.24 Data Source *Check all the source(s) used in the component measures.*

- ☐ Documentation of original self-assessment *(e.g., SF-36)*
- ☐ Electronic administrative data/ claims
- ☐ Electronic Clinical Data *(e.g., MDS)*
- ☐ Electronic Health/Medical Record
- ☐ External audit
- ☐ Lab data
- ☐ **M**anagement data
- ☐ Organizational policies and procedures
- ☐ Paper Medical Record/flowsheet
- ☐ Pharmacy data
- ☐ Public health data/vital statistics
- ☒ Registry data
- ☐ Survey-patient *(e.g., CAHPS)*
- ☐ Survey-provider
- ☐ Special or unique data, specify:

2a.25 Data source or collection instrument (*Identify the specific data source or data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): National Cardiovascular Data Registry (NCDR®) CathPCI Registry®

2a.26 Data source/data collection instrument attached ☐ **OR 2a.27 at web page URL:**
http://www.ncdr.com/WebNCDR/ELEMENTS.ASPX

2a.29 Data dictionary/code table attached ☐ **OR 2a.30 at web page URL:**
http://www.ncdr.com/WebNCDR/ELEMENTS.ASPX

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

Clinicians: ☐ Individual ☐ Group ☐ Other
- ☒ Facility/Agency (e.g., hospital, nursing home)
- ☐ Health plan
- ☐ Integrated delivery system
- ☐ **M**ulti-site/corporate chain
- ☐ Prescription drug plan

Program: ☐ Disease management ☐ QIO
- ☐ Other

Population: ☐ National ☐ Regional/network ☐ State ☐ Counties/Cities

☐ Measured at all levels
☐ Other (*Please describe*):

2a.26 Care Settings (*Check the settings for which the measure is specified and tested; check all that apply***)**
Ambulatory Care: ☐ Amb Surgery Center ☐ Office ☐ Clinic ☐ Emergency Dept ☒ Hospital Outpatient

☐ Assisted Living
☐ Behavioral health/psychiatric unit
☐ Dialysis Facility
☐ Emergency medical services/ambulance
☐ Group Home
☐ Home
☐ Hospice

☒ Hospital
☐ Long term acute care hospital
☐ Nursing home/ Skilled Nursing Facility (SNF)
☐ Rehabilitation Facility
☐ All settings
☐ Unspecified or "not applicable"
☐ Other (*Please describe*):

2a.38 Clinical Services (*Healthcare services being measured; all that apply.*)

Behavioral Health:
- ☐ Mental health
- ☐ Substance use treatment
- ☐ Other

Clinicians:
- ☐ Audiologist
- ☐ Chiropractor
- ☐ Dentist/Oral surgeon
- ☐ Dietician/Nutritional professional
- ☐ Nurses
- ☐ Optometrist
- ☒ PA/NP/Advanced Practice Nurse
- ☐ Pharmacist

- ☒ Physicians (MD/DO)
- ☐ Podiatrist
- ☐ Psychologist/LCSW
- ☐ PT/OT/Speech
- ☐ Respiratory Therapy
- ☐ Other

☐ Dialysis
☐ Home health
☐ Hospice/Palliative care
☐ Imaging services
☐ Laboratory
☐ Other

If the component measures are combined at the patient level and include outcomes, complete the following

2a.12 Risk Adjustment Type: ☒ No risk adjustment necessary ☐ analysis by subgroup ☐ case-mix adjustment ☐ paired data at patient level ☐ risk-adjustment devised specifically for this measure/condition ☐ risk adjustment method widely or commercially available
☐ Other (specify) **2a.13**

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 Detailed risk model attached ☐ **OR 2a.16 at web page URL:**

TESTING/ANALYSIS

2i. Component item/measure analysis to justify inclusion in composite

2i.1 Data/sample: N/A

2i.2 Analytic Method: N/A

2i.3 Results: This is an all-or-none approach to assessing whether patients receive all medications at discharge that they are eligible for following PCI. Correlation analyses are not needed to support this approach.

Comment [KP8]: 2i. Component item/measure analysis (e.g., various correlation analyses such as internal consistency reliability), demonstrates that the included component items/measures fit the conceptual construct;
OR
justification and results for alternative analyses are provided.

2j. Component item/measure analysis of contribution to variability in composite score

2j.1 Data/sample: 1121 facilities in the CathPCI Registry, 566,305 patient records between July 2009 and June 2010.

2j.2 Analytic Method: Distribution of medication prescription at discharge.

2j.3 Results:
Aspirin testing results:
Performance ranged from 89% at the 5th percentile to 100% at the 95th percentile. 25% of hospitals did not prescribe aspirin at discharge for 5% of its patients.

Comment [KP9]: 2j. Component item/measure analysis demonstrates that the included components contribute to the variation in the overall composite score;
OR
if not, justification for inclusion is provided.

2j
C ☐
P ☐
M ☐
N ☐

P2Y12:
Performance ranged from 92.7% at the 5th percentile to 100% at the 95th percentile.

Statins:
Performance ranged from 72% at the 5th percentile to 98% at the 95th percentile. 50% of hospitals did not prescribe statins at discharge for 10% of its patients.

2k. Analysis to support differential weighting of component scores

2k.1 Data/sample: N/A- no differential weighting

2k.2 Analytic Method: N/A

2k.3 Results: N/A

2k.4 Describe how the method of scoring/aggregation achieves the stated purpose and represents the quality construct: N/A

2k.5 Indicate if any alternative scoring/aggregation methods were tested and why not chosen: N/A

2k C☐ P☐ M☐ N☐

Comment [KP10]: 2k. The scoring/aggregation and weighting rules are consistent with the conceptual construct. (Simple, equal weighting is often preferred unless differential weighting is justified. Differential weights are determined by empirical analyses or a systematic assessment of expert opinion or values-based priorities.)

2l. Analysis of missing component scores

2l.1 Data/sample:

2l.2 Analytic Method:

2l.3 Results: Patients who are eligible for a medication included in the measure but have missing values for the medication are excluded from eligibility for that measure in the same way that patients who are contraindicated or blinded are excluded.

2l C☐ P☐ M☐ N☐

Comment [KP11]: 2l. Analysis of missing component scores supports the specifications for scoring/aggregation and handling of missing component scores.

2b. Reliability testing of composite score

2b.1 Data/sample *(description of data/sample and size)*: Reliability was established by validating the derivation cohort from version 4 CathPCI data with a testing cohort from version 3 CathPCI data. 522,969 patient records were analyzed from 1007 facilities between July 2008 and June 2009.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)*: Reliability was established by validating the derivation cohort from version 4 CathPCI data with a testing cohort from version 3 CathPCI data.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*: Results were consistent among the derivation cohort and the testing cohort. Specifically, the median for hospitals in the derivation cohort was 86.5% with the lowest decile 71.4% and highest decile 95.1%. This is similar to that observed in the testing cohort (median 85.9%, lowest decile 70.4%, highest decile 94.7%).

2b C☐ P☐ M☐ N☐

Comment [KP12]: 2b. Reliability testing of the composite measure demonstrates the results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

2c. Validity testing of composite score

2c.1 Data/sample *(description of data/sample and size)*: Face/content validity: review of relevant evidence and guidelines and expert panel consensus process.

2c.2 Analytic Method *(type of validity & rationale, method for testing)*: Face/content validity was established to ensure this measure represented an important aspect of cardiovascular care for which improvement is needed.

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: A review of the relevant evidence and guidelines and expert panel consensus process resulted in the conclusion that this is a valid measure of quality of cardiovascular care for patients with PCI where variation in practice exists.

2c C☐ P☐ M☐

Comment [KP13]: 2c. Validity testing of the composite measure 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.

2f. Identification of Meaningful Differences in Performance Across Entities

Comment [KP14]: 2f. Methods for scoring and analysis of the composite 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)*: Data were obtained from the CathPCI Registry for 586,975 patients from 1168 facilities from July 2009 to June 2010.

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*: Distribution by quartile, mean, median, SD.

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)* : Performance ranged from 64.6% at the 5th percentile to 96.6% at the 95th percentile. Performance at the 50th percentile was 86.5%. Additional data is available in the supplemental documentation provided. The mean was 84.3% and the SD was 11.2%

Mean	0.8430
SD	0.1122
100%	1.0000
99%	1.0000
95%	0.9655
90%	0.9511
75% Q3	0.9189
50%	0.8646
25% Q1	0.7955
10%	0.7143
5%	0.6455
1%	0.4277
0% Min	0.0000

C☐ P☐ M☐ N☐

2h. Disparities in Care

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

Performance based on safety net status:

Non-Safety Net Hospitals:	Safety Net Hospitals:
5%: 65.6%	57.6%
25%: 80.4%	75.0%
50%: 86.7%	84.0%
75%: 91.83	92.0%
95%: 96.6%	96.3%

Performance by Quartile of %White:

	Q1	Q2	Q3	Q4
25%	77.3%	80.2%	81.4%	79.3%
50%	85.1%	86.3%	87.6%	87.3%
75%	91.6%	90.7%	92.0%	92.8%
95%:	95.8%	96.4%	96.9%	97.7%
Mean	82.6%	84.4%	85.3%	84.8%
SD	12.7%	9.4%	10.6%	11.8%

Performance by Gender:

Female	Male
5%: 60.0%	64.4%
25%: 76.7%	80.8%
50%: 84.6%	87.6%
75%: 90.8%	92.6%
95%: 97.9%	97.3%
Mean 82.4%	85.3%
SD 12.8%	11.2%

Comment [KP15]: 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
C☐ P☐ M☐ N☐ NA☐

Performance by Age:

	>/=65	<65
5%:	61.3%	66.8%
25%:	77.0%	82.0%
50%:	84.6%	88.4%
75%:	90.7%	93.3%
95%:	96.9%	97.9%
Mean	82.5%	86.1%
SD	12.1%	11.3%

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

If the component measures are combined at the patient level, complete 2d.

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s): Exclusions are based on expert consensus for appropriate contraindications for these medications. Patients are also exluded when discharged to other acute care hospital, hospice, o against medical advice.

2d.2 Citations for Evidence:

2d.3 Data/sample *(description of data/sample and size)***:** Data were obtained from the CathPCI Registry for 586,975 patient from 1168 facilities from July 2009 to June 2010.

2d.4 Analytic Method *(type analysis & rationale)***:** Rate of exclusion coding.

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)***:** Rates of exclusion coding:
Discharged to hospice: 0.14%
Discharged against medical advice: 0.21%
Discharged to other acute care: 0.68%
Deceased: 1.37%

Statin contraindicated or blinded: 8,999 (1.57%)
P2Y12 contraindicated or blinded: 1,991 (0.38%)
Aspirin contraindicated or blinded: 6,682 (1.12%)

Comment [KP16]: 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).

If the component measures are combined at the patient level and include outcomes, complete 2e.

2e. Risk Adjustment

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

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:

Comment [KP17]: 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; OR
rationale/data support no risk adjustment.

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. (composite measure evaluation criteria)

Eval

3a. Meaningful, Understandable, and Useful Information

3a.1 **Current Use:** ☐ In use ☒ Not 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*)**:**
ACCF plans to begin voluntary public reporting of NCDR measures, including this measure, by 2012. ACCF is currently evaluating public reporting options and finalizing decisions related to location and display of information to be reported as well as communication plans.

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***):**
This measure will be used in the CathPCI Registry for hospital benchmarking for quality improvement efforts within the next year.

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)***:** No data available.

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

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

3a
C☐
P☐
M☐
N☐

Comment [KP18]: 3a. Demonstration that information produced by the composite 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).

3b/3c. Relation to other NQF-endorsed measures
Identify similar or related NQF-endorsed measures to components and/or composite

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

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:** There is currently not an endorsed composite measure for medication prescribing at discharge following PCI.

3b. Harmonization

3b.2 **Are the component measure specifications harmonized, or if not, why?**
Yes, component measure specifications are harmonized with endorsed measures wherever possible.

P☐
M☐
N☐
NA☐

Comment [KP19]: 3b. The component measure specifications are harmonized.

3c. Distinctive or Additive Value

3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:**
There is currently not an endorsed composite measure for medication prescribing at discharge following PCI.

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

Comment [KP20]: 3c. Review of existing endorsed measures and measure sets demonstrates that the composite 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).

3d. Decomposition of Composite

3d.1 **Describe the information that is available from decomposing the composite into its components:**
Please see the calculation algorithm.

Comment [k21]: 5. Demonstration that the measure is superior to competing measures – new submissions and/or endorsed measures (e.g., is a more valid or efficient way to measure).

Comment [KP22]: 3d. Data detail is maintained such that the composite measure can be decomposed into its components to facilitate transparency and understanding.

3e. Achieved stated purpose

3e.1 **Describe how the scores from testing or use reported in 2f demonstrate that the composite achieves the stated purpose:** Current testing results of this measure demonstrate that there is a gap in performance for this measure.

Comment [KP23]: 3e. Demonstration (through pilot testing or operational data) that the composite measure achieves the stated purpose/objective.

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. (composite measure evaluation criteria)	**Eval**
4a. Data Generated as a Byproduct of Care Processes **4a.1 How are all the data elements that are needed to compute measure scores generated?** (*Check all that apply*) ☒ Data are generated as a 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, registry)* ☐ Survey ☐ Other *(e.g., patient experience of care surveys, provider surveys, observation)*, *Please describe*:	**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 ☐ No **4b.2 If no, specify the near-term path to achieve electronic capture by most providers.** *Note: Measure stewards will be asked to specify the data elements for electronic health records at a later date*	**4b** **C☐** **P☐** **M☐** **N☐**
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.** Inaccuracies may occur if certified vendors export data incorrectly, in transmission of data from medical record to a paper form and then to the online data collection tool. Some sites may overcode medication exclusions. A vendor certification process has been established to ensure high quality data collection and submission. The NCDR audit program is in place to assess reliability of data abstraction. All elements required to capture this measure will be added upon NQF endorsement.	**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 composite/component measures regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Beta testing with a set of registry participants takes place with each new registry version to identify errors in the data collection tool. The Data Quality Report (DQR) program has been developed to ensure data are valid and complete. The DQR is a process fo submitting data files to the NCDR®. Participants use their data collection tool software to create a submission file which is uploaded to the NCDR website. After uploading, the data in the file is automatically checked for errors and completeness. Passing the DQR ensures well-formed data and a statistically significant submission. Types of errors detected by the DQR include: Schema:Structure doesn't match NCDR requirements Dates: Inconsistent dates Selection: Missing or mismatched data; Can be a parent/child errors where a field requests more data. Outlier: Anomalies or exceptions; Data exceeds the possible limits. For example: 1,000mm length lesion. Counter: errors deal with Closure Methods, Lesions, and Intracoronary Devices. Each one has a counter, when more than one is used List: Missing data in the Medications or either Device lists. **4.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** CathPCI Registry participants pay a fee of $3,800/year to enroll in the registry. Staff resources are needed for data collection and submission at the participating institution. Registry site managers/data collectors undergo (non-mandatory)	**4e** **C☐** **P☐** **M☐** **N☐**

Comment [KP24]: 4a. For clinical composite measures, overall the required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery.

Comment [KP25]: 4b. The required data elements for the composite overall are available in electronic sources.

Comment [KP26]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP27]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) for obtaining all component measures can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

training offered by the NCDR.
4e.3 Evidence for costs:
http://www.ncdr.com/WebNCDR/ncdrdocuments/B08352N%20CathPCI%20Registry%20EnrolIment%20Packet%20Complete.pdf
4e.4 Business case documentation:

If the component measures are combined at the patient level, complete 4c.

4c. Exclusions

4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications? ☒ No ☐ Yes ▶**If yes, provide justification**

4c
H☐

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.

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**
Rationale:
C☐ **P**☐ **M**☐ **N**☐

RECOMMENDATION

Steering Committee: Do you recommend for endorsement? **Y**☐ **N**☐ **A**☐
Comments:

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Organization: American College of Cardiology Foundation (ACCF)
Street Address: 2400 N St NW **City:** Washington **State:** DC **ZIP:** 20037

Co.2 Point of Contact: First Name: Kristyne **Last Name:** McGuinn **Credentials (MD, MPH, etc.):** MHS
Email: kmcguinn@acc.org **Telephone:** 202-375-6529 ext:

Co.3 Measure Developer If different from Measure Steward
Organization:
Street Address: **City:** **State:** **ZIP:**

Co.4 Point of Contact: First Name: **Last Name:** **Credentials (MD, MPH, etc.):**
Email: **Telephone:** ext:

Co.5 Submitter
Organization: ☒ Measure Steward ☐ Measure Developer
First Name: Kristyne **Last Name:** McGuinn **Credentials (MD, MPH, etc.):** MHS
Email: kmcguinn@acc.org **Telephone:** 202-375-6529 ext:

Co.6 List any additional organizations that sponsored/participated in measure development: Society for Cardiovascular Angiography and Interventions (SCAI

ADDITIONAL INFORMATION

Ad.1 Workgroup/Expert Panel involved in measure development
Provide a list of workgroup/panel member names and organizations. Describe the group's role in measure development.
The CathPCI Steering Committee developed the initial metrics used for quality improvement in the CathPCI outcomes reports. The measures were selected for appropriateness for public reporting by the NCDR public reporting workgroup.

CathPCI Steering Committee:
Douglas Weaver, MD, FACC
Ronald Krone, MD, FACC
Gregory Dehmer, MD, FSCAI
John Messenger, MD, FACC
Lloyd Klein, MD, FACC

John Rumsfeld, MD, PhD, FACC
John Carroll, MD, FACC
Mauro Moscucci, MD, FACC
Jeffrey Popma, MD, FACC
Issam Moussa, MD, FSCAI
Kirk Garratt, MD, FSCAI
David Malenka, MD, FACC

Public Reporting Workgroup:
Fred Masoudi, MD, MSPH, FACC, FAHA, FACP
H. Vernon Anderson,MD, FACC, FSCAI
David Malenka, MD, FACC
Matt Roe, MD, FACC
Steve Hammill, MD, FHRS, FACC
Jeptha Curtis, MD, FACC
Paul Heidenreich, MD, MS, FACC
Brahmajee Nallamothu, MD, MPH, FACC
Mark Kremers, MD, FACC
Christopher White MD, FACC
Carl Tommaso, MD, FACC, FAHA, FSCAI
Sunil Rao, MD, FACC, FSCAI
Andrea Russo, MD, FACC, FHRS
Debabrata Mukherjee MD, FACC

Ad.2 If adapted, name of original measure:
Ad.3 If adapted, original specifications ☐ **attachment or Ad.4 web page URL:**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2011
Ad.7 Month and Year of most recent revision:
Ad.8 What is the frequency for review/update of this measure? Annually
Ad.9 When is the next scheduled review/update for this measure? 2012

Ad.10 Copyright statement/disclaimers:

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

I have checked that the submission is complete and all the information needed to evaluate the measure is provided in the form; any blank fields indicate that no information is provided. ☒

Date of Submission (*MM/DD/YY*)**:** 3/29/2011

CathPCI Registry Composite Measure Specifications

Therapy with aspirin, P2Y12 inhibitor, and statin at discharge following PCI in eligible patients Description: Patients undergoing PCI who receive prescriptions for all medications (aspirin, P2Y12 and statins) for which they are eligible for at discharge	
Numerator	Patients who receive <u>all</u> medications <u>for which they are eligible</u>. 1. Aspirin prescribed at discharge (if eligible for aspirin as described in denominator) AND 2. P2Y12 agent (clopidogrel, prasurgel, or ticlopidine) prescribed at discharge (if eligible for P2Y12 as described in denominator) AND 3. Statin prescribed at discharge (if eligible for statin as described in denominator)
Denominator	All patients surviving hospitalization who are eligible to receive any one of the three medication classes: 1) <u>Eligibile for aspirin (ASA):</u> Patients undergoing PCI who do not have a contraindication to aspirin documented <u>OR</u> 2) <u>Eligibility for P2Y12 agent (clopidogrel, prasugrel, or ticlopidine):</u> Patients undergoing PCI with stenting who do not have a contraindication to P2Y12 agent documented <u>OR</u> 3) <u>Eligibility for statin therapy:</u> Patients undergoing PCI who do not have a contraindication to statin therapy.
Inclusion	Data from submissions that pass NCDR data inclusion thresholds.

Criteria	
Exclusion Criteria	-Discharge status of expired -Discharge location of “other acute care hospital”, “hospice” or “against medical advice”.
Population	Patients with a PCI procedure

Micro-specifications:

Key:
Y (yes) =Eligible and prescribed at discharge
N (no) =Eligible but not prescribed at discharge
O (not eligible) = Not eligible (i.e. contraindicated)

Note: All 3 PY12 medications must be contraindicated to be excluded in the numerator or denominator.

Eligibility and measure counts for pts undergoing PCI who had a stent implanted

	ASA	P2Y12	Statin	Measure Eligiblity	Composite
		stent count >0		Denominator	Numerator
1	y	y	y	Yes	Yes
2	y	y	n	Yes	No
3	y	y	o	Yes	Yes
4	y	n	y	Yes	No
5	y	n	n	Yes	No
6	y	n	o	Yes	No
7	y	o	y	Yes	Yes
8	y	o	n	Yes	No
9	y	o	o	Yes	Yes
10	n	y	y	Yes	No
11	n	y	n	Yes	No
12	n	y	o	Yes	No
13	n	n	y	Yes	No
14	n	n	n	Yes	No
15	n	n	o	Yes	No
16	n	o	y	Yes	No
17	n	o	n	Yes	No

18	n	o	o		Yes		No
19	o	y	y		Yes		Yes
20	o	y	n		Yes		No
21	o	y	o		Yes		Yes
22	o	n	y		Yes		No
23	o	n	n		Yes		No
24	o	n	o		Yes		No
25	o	o	y		Yes		Yes
26	o	o	n		Yes		No
27	o	o	o		No		

Micro-specifications:

Eligibility and measure counts for pts undergoing PCI who had <u>NO</u> stent implanted

	ASA	P2Y12 stent count =0	Statin		Measure Eligibility Den		Measure Count Num
1	y	n/a	y		Yes		Yes
2	y	n/a	n		Yes		No
3	y	n/a	o		Yes		Yes
4	n	n/a	y		Yes		No
5	n	n/a	n		Yes		No
6	n	n/a	o		Yes		No
7	o	n/a	y		Yes		Yes
8	o	n/a	n		Yes		No
9	o	n/a	o		No		

PCI Composite Measure Testing Results (ACC)

Therapy with aspirin, P2Y12 inhibitor, and statin at discharge following PCI in eligible patients: Testing Sample

Exclusions	Number of Hospital Stays		Number of Patients		Number of Facilities	
	#	%	#	%	#	%
Initial Sample	**1282945**	**100**	**1201850**	**100**	**1168**	**100**
Discharges not July 2009-June 2010	0	0.00	0	0.00	0	0.00
Remaining	**1282945**	**100.00**	**1201850**	**100.00**	**1168**	**100.00**
Without PCI during the admission	695970	54.25	659146	54.84	46	3.94
Remaining	**586975**	**45.75**	**542704**	**45.16**	**1122**	**96.06**
Discharge Status: deceased	8027	1.37	7705	1.42	0	0.00
Remaining	**578948**	**98.63**	**534999**	**98.58**	**1122**	**100.00**
Discharge Location: Other acute care hospital	3931	0.68	3753	0.70	1	0.09
Remaining	**575017**	**99.32**	**531246**	**99.30**	**1121**	**99.91**
Discharge Location: Hospice	798	0.14	759	0.14	0	0.00
Remaining	**574219**	**99.86**	**530487**	**99.86**	**1121**	**100.00**
Discharge Location: Left against medical a	1232	0.21	1070	0.20	0	0.00
Remaining	**572987**	**99.79**	**529417**	**99.80**	**1121**	**100.00**
Not eligible to the composite measure	1544	0.27	1362	0.26	0	0.00
Study Sample	**571443**	**99.73**	**528055**	**99.74**	**1121**	**100.00**
The composite measure at discharge	487217	85.26	452650	85.72	1120	99.91
Admissions with MI	**181813**	**31.82**	**179030**	**33.90**	**1118**	**99.73**
The composite measure at discharge	161857	89.02	159607	89.15	1113	99.55
Amdissions without MI	**389630**	**68.18**	**362900**	**68.72**	**1103**	**98.39**
The composite measure at discharge	325360	83.50	304678	83.96	1102	99.91

PCI Composite Measure Testing Results (ACC)

	ASA	P2Y12	Statin		Measure Eligibility			Measure Count	
	stent count >0				Num	Den		Num	Den
1	y	y	y		1	1		1	1
2	y	y	n		1	1		0	1
3	y	y	c		1	1		1	1
4	y	n	y		1	1		0	1
5	y	n	n		1	1		0	1
6	y	n	c		1	1		0	1
7	y	c	y		1	1		1	1
8	y	c	n		1	1		0	1
9	y	c	c		1	1		1	1
10	n	y	y		1	1		0	1
11	n	y	n		1	1		0	1
12	n	y	c		1	1		0	1
13	n	n	y		1	1		0	1
14	n	n	n		1	1		0	1
15	n	n	c		1	1		0	1
16	n	c	y		1	1		0	1
17	n	c	n		1	1		0	1
18	n	c	c		1	1		0	1
19	c	y	y		1	1		1	1
20	c	y	n		1	1		0	1
21	c	y	c		1	1		1	1
22	c	n	y		1	1		0	1
23	c	n	n		1	1		0	1
24	c	n	c		1	1		0	1
25	c	c	y		1	1		1	1
26	c	c	n		1	1		0	1
27	c	c	c		0	0		n/a	n/a
	stent count =0				Num	Den		Num	Den
1	y	n/a	y		1	1		1	1
2	y	n/a	n		1	1		0	1
3	y	n/a	c		1	1		1	1
4	n	n/a	y		1	1		0	1
5	n	n/a	n		1	1		0	1
6	n	n/a	c		1	1		0	1
7	c	n/a	y		1	1		1	1
8	c	n/a	n		1	1		0	1
9	c	n/a	c		0	0		n/a	n/a

Reference 1. P2Y12

Stent	Clopidogrel	Ticlopidine	Prasurel	P2Y12	#	%
No	No	No	No	N/A	6643	1.16
No	No	No	Yes	N/A	1648	0.29
No	No	No	Other	N/A	2275	0.40
No	No	Yes	No	N/A	83	0.01
No	No	Yes	Yes	N/A	3	0.00
No	No	Yes	Other	N/A	46	0.01
No	No	Other	No	N/A	1	0.00
No	No	Other	Yes	N/A	1	0.00
No	No	Other	Other	N/A	6	0.00
No	Yes	No	No	N/A	26167	4.58
No	Yes	No	Yes	N/A	53	0.01
No	Yes	No	Other	N/A	10607	1.86
No	Yes	Yes	No	N/A	26	0.00
No	Yes	Yes	Yes	N/A	4	0.00
No	Yes	Yes	Other	N/A	20	0.00
No	Yes	Other	No	N/A	10	0.00
No	Yes	Other	Yes	N/A	1	0.00
No	Yes	Other	Other	N/A	65	0.01
No	Other	No	No	N/A	422	0.07
No	Other	No	Yes	N/A	111	0.02
No	Other	No	Other	N/A	219	0.04
No	Other	Yes	No	N/A	45	0.01
No	Other	Yes	Yes	N/A	2	0.00
No	Other	Yes	Other	N/A	41	0.01
No	Other	Other	No	N/A	26	0.00
No	Other	Other	Yes	N/A	18	0.00
No	Other	Other	Other	N/A	594	0.10
No	No/Yes/Other	No/Yes/Other	No/Yes/Other	N/A	49137	8.60
Yes	No	No	No	No	6195	1.08
Yes	No	No	Yes	Yes	29292	5.13
Yes	No	No	Other	No	3127	0.55
Yes	No	Yes	No	Yes	752	0.13
Yes	No	Yes	Yes	Yes	40	0.01
Yes	No	Yes	Other	Yes	356	0.06
Yes	No	Other	No	No	3	0.00
Yes	No	Other	Yes	Yes	7	0.00
Yes	No	Other	Other	No	17	0.00
Yes	Yes	No	No	Yes	354958	62.12
Yes	Yes	No	Yes	Yes	683	0.12
Yes	Yes	No	Other	Yes	121588	21.28
Yes	Yes	Yes	No	Yes	238	0.04

Yes	Yes	Yes	Yes	Yes	61	0.01
Yes	Yes	Yes	Other	Yes	172	0.03
Yes	Yes	Other	No	Yes	87	0.02
Yes	Yes	Other	Yes	Yes	1	0.00
Yes	Yes	Other	Other	Yes	735	0.13
Yes	Other	No	No	No	487	0.09
Yes	Other	No	Yes	Yes	1318	0.23
Yes	Other	No	Other	No	465	0.08
Yes	Other	Yes	No	Yes	419	0.07
Yes	Other	Yes	Yes	Yes	5	0.00
Yes	Other	Yes	Other	Yes	353	0.06
Yes	Other	Other	No	Yes	13	0.00
Yes	Other	Other	Yes	Yes	245	0.04
Yes	Other	Other	Other	Other	689	0.12

* Other includes missing, conindicated, blinded.

Reference 2. Composite Measure (CM)

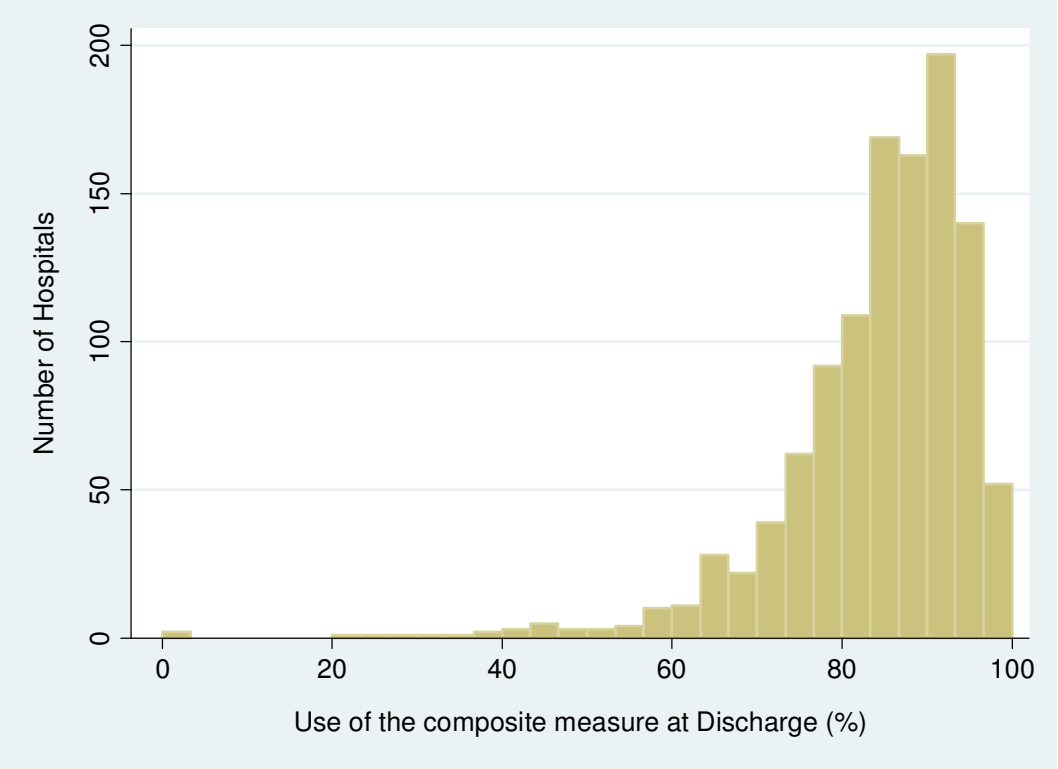
ASA	P2Y12	STATIN	CM	#	%
No	No	No	No	3006	0.53
No	No	Yes	No	484	0.08
No	No	Other	No	6	0.00
No	Yes	No	No	2510	0.44
No	Yes	Yes	No	8694	1.52
No	Yes	Other	No	81	0.01
No	Other	No	No	6	0.00
No	Other	Yes	No	17	0.00
No	Other	Other	No	1	0.00
No	N/A	No	No	911	0.16
No	N/A	Yes	No	1411	0.25
No	N/A	Other	No	20	0.00
Yes	No	No	No	1228	0.21
Yes	No	Yes	No	5332	0.93
Yes	No	Other	No	86	0.02
Yes	Yes	No	No	53752	9.41
Yes	Yes	Yes	Yes	435613	76.23
Yes	Yes	Other	Yes	6409	1.12
Yes	Other	No	No	84	0.01
Yes	Other	Yes	Yes	517	0.09
Yes	Other	Other	Yes	26	0.00
Yes	N/A	No	No	5621	0.98
Yes	N/A	Yes	Yes	39842	6.97
Yes	N/A	Other	Yes	648	0.11
Other	No	No	No	42	0.01
Other	No	Yes	No	94	0.02
Other	No	Other	No	29	0.01
Other	Yes	No	No	679	0.12
Other	Yes	Yes	Yes	3423	0.60
Other	Yes	Other	Yes	149	0.03
Other	Other	No	No	11	0.00
Other	Other	Yes	Yes	27	0.00
Other	N/A	No	No	121	0.02
Other	N/A	Yes	Yes	563	0.10

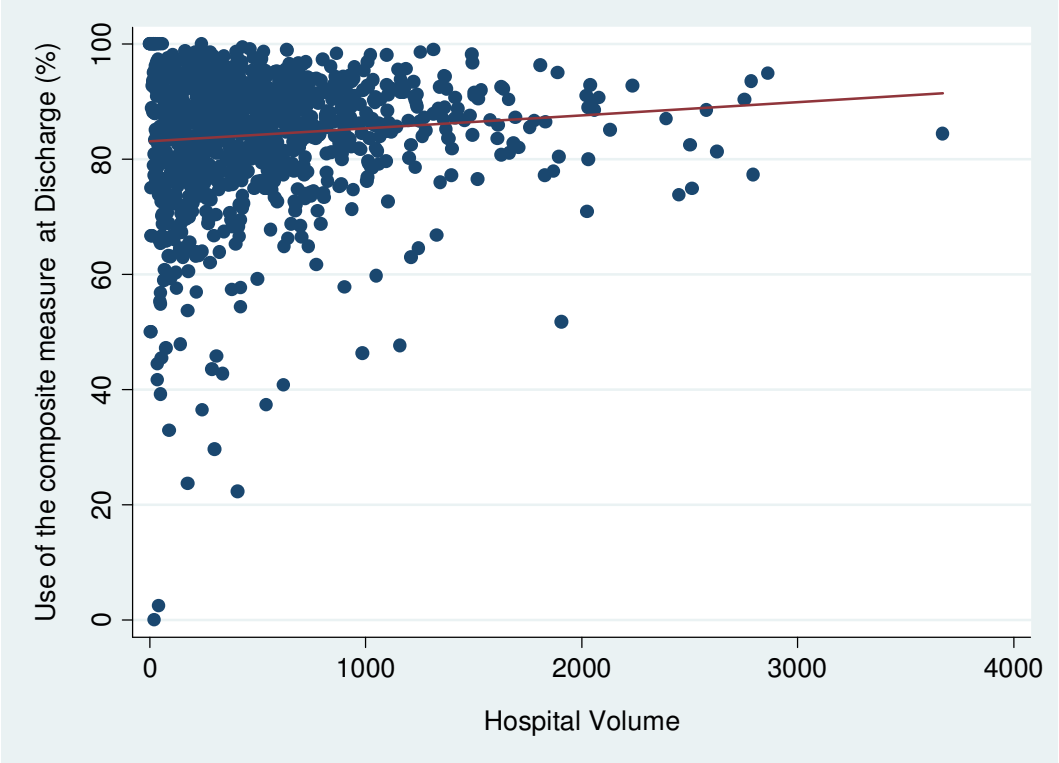
* Other includes missing, conindicated, blinded.

Distribution of PCI Composite Measure at Discharge

Description	Volume	DCM
N	1121	1121
Mean	509.76	0.8430
Std Deviation	463.92	0.1122
100% Max	3671	1.0000
99%	2234	1.0000
95%	1396	0.9655
90%	1061	0.9511
75% Q3	683	0.9189
50% Median	393	0.8646
25% Q1	183	0.7955
10%	79	0.7143
5%	41	0.6455
1%	14	0.4277
0% Min	1	0.0000

PCI Composite Measure Testing Results (ACC)



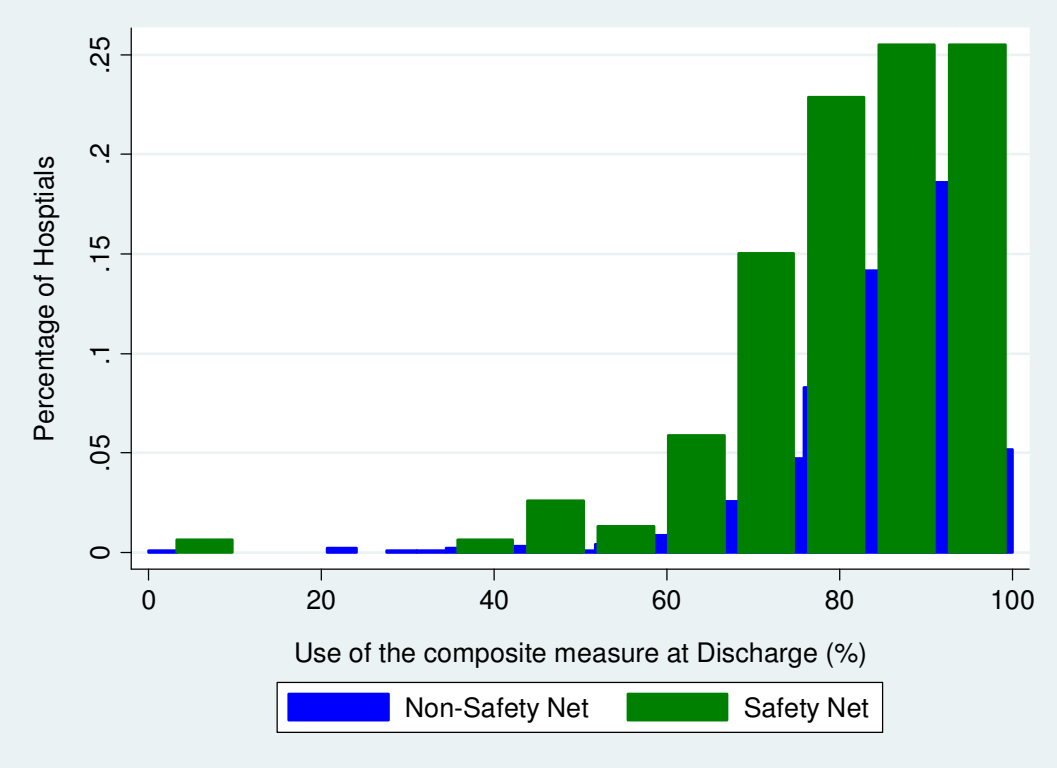


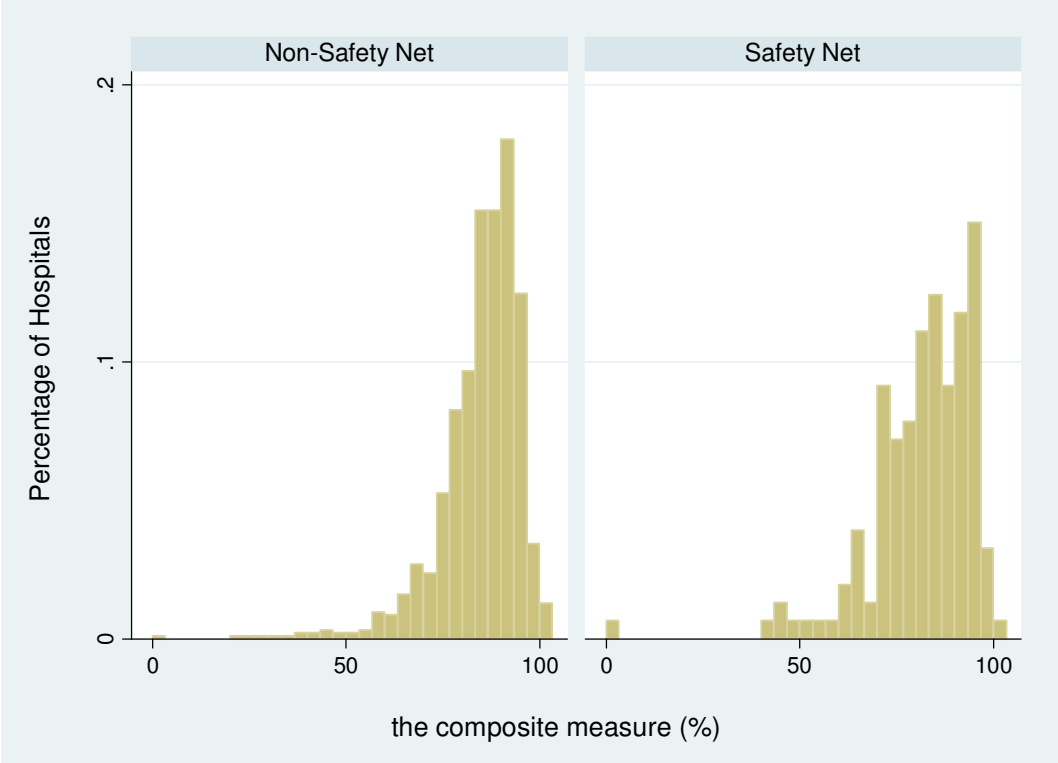
Distribution of PCI Composite Measure at Discharge Stratified by Safety Net Status

Description	Safety Net Status*			
	No		Yes	
	Volume	DCM	Volume	DCM
N	931	931	153	153
Mean	523.70	0.8471	457.86	0.8153
Std Deviation	475.51	0.1084	389.20	0.1341
100% Max	3671	1.0000	2130	1.0000
99%	2451	1.0000	2025	0.9826
95%	1425	0.9655	1210	0.9631
90%	1094	0.9509	990	0.9479
75% Q3	698	0.9183	649	0.9197
50% Median	406	0.8673	343	0.8396
25% Q1	192	0.8041	180	0.7500
10%	80	0.7286	91	0.6582
5%	44	0.6559	42	0.5760
1%	14	0.4277	16	0.4081
0% Min	1	0.0000	4	0.0244

* Defined as government hospitals or non-government hosptials with high medicaid caseload using AHA 2008 Data.

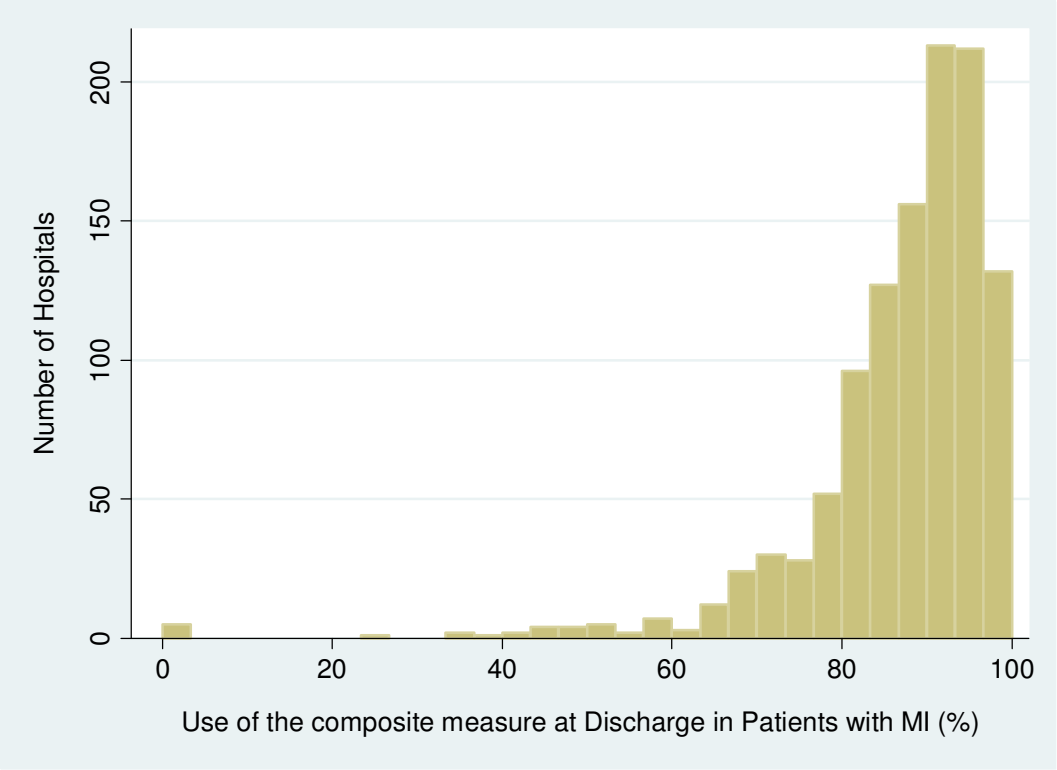
PCI Composite Measure Testing Results (ACC)



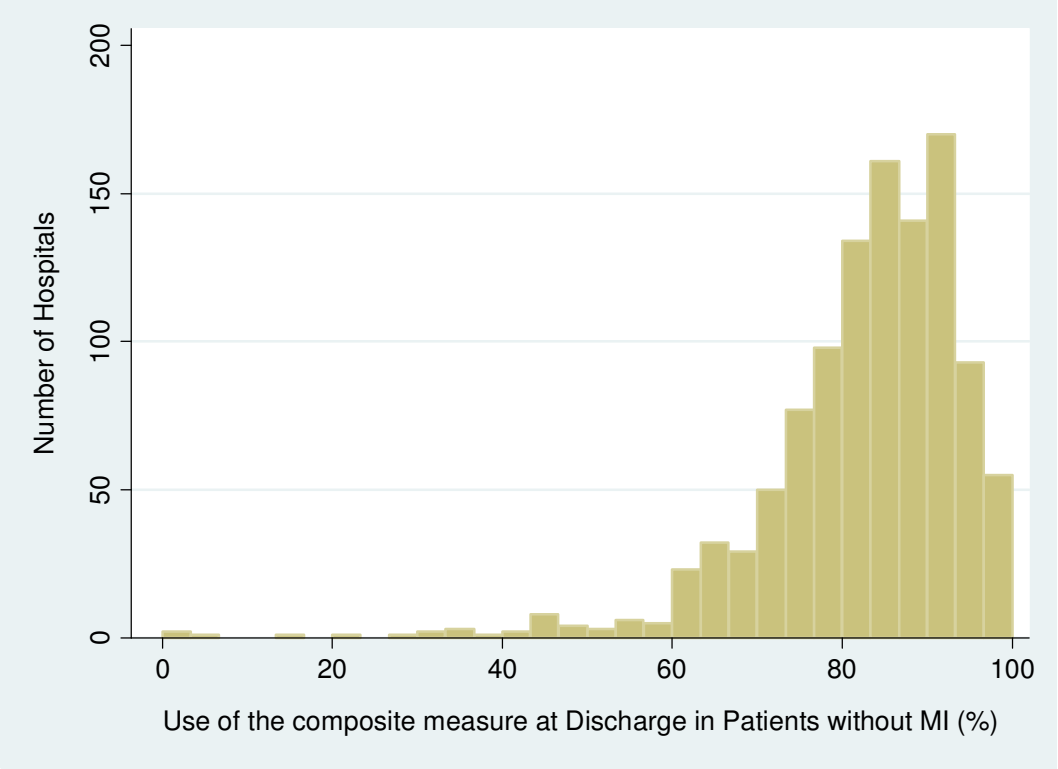


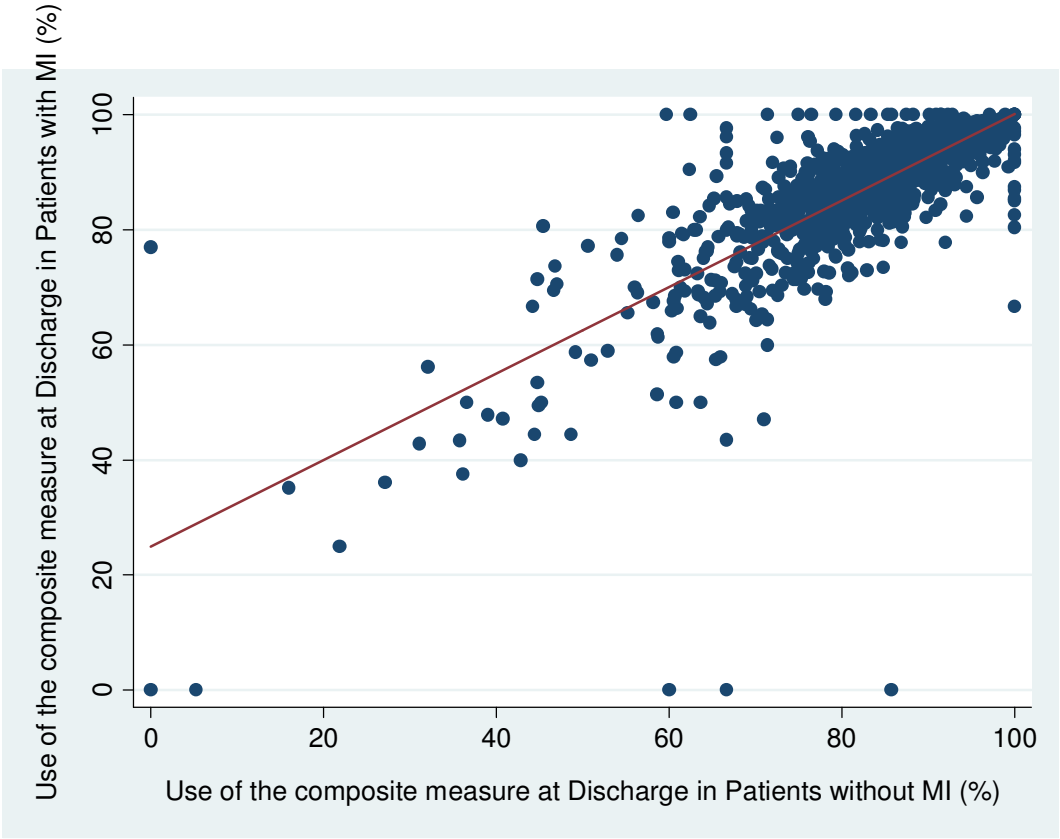
Distribution of PCI Composite Measure at Discharge

Description	In Admissions with MI			
	Yes		No	
	Volume	DCM	Volume	DCM
N	1118	1118	1103	1103
Mean	162.62	0.8711	353.25	0.8261
Std Deviation	140.82	0.1166	344.39	0.1206
100% Max	1106	1.0000	2565	1.0000
99%	709	1.0000	1633	1.0000
95%	454	0.9828	1020	0.9666
90%	336	0.9709	767	0.9430
75% Q3	224	0.9429	464	0.9075
50% Median	126	0.8994	262	0.8490
25% Q1	62	0.8333	126	0.7763
10%	28	0.7477	46	0.6884
5%	15	0.6818	25	0.6170
1%	4	0.4336	3	0.3909
0% Min	1	0.0000	1	0.0000



PCI Composite Measure Testing Results (ACC)

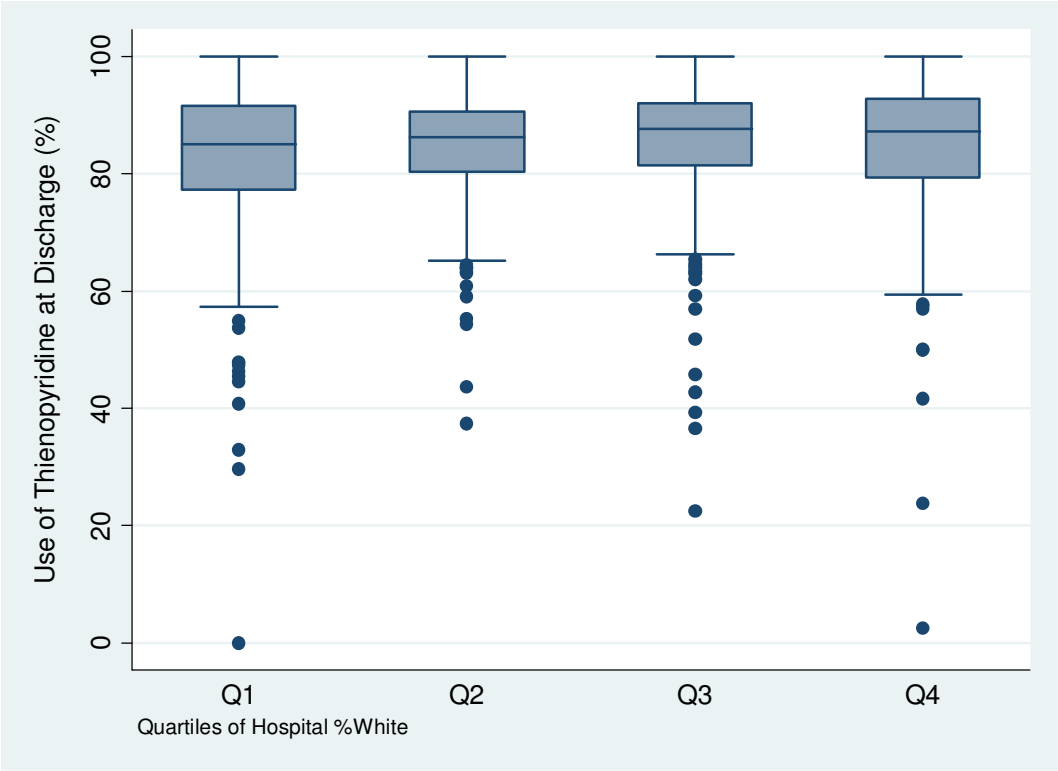




Distribution of PCI Composite Measure at Discharge Stratified by Hospital %White

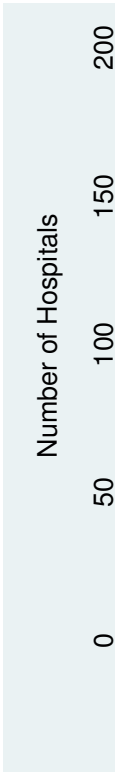
Description	%White	%White Q1		%White Q2		%White Q3		%White Q4	
		Volume	DCM	Volume	DCM	Volume	DCM	Volume	DCM
N	1121	280	280	280	280	281	281	280	280
Mean	0.8789	481.63	0.8262	536.93	0.8443	548.66	0.8534	471.69	0.8482
Std Deviation	0.1358	514.16	0.1266	428.43	0.0939	465.75	0.1061	440.29	0.1180
100% Max	1.0000	3671	1.0000	2627	1.0000	2787	1.0000	2794	1.0000
99%	1.0000	2753	1.0000	2031	0.9954	2503	1.0000	2234	1.0000
95%	0.9945	1391	0.9579	1420	0.9639	1415	0.9692	1380	0.9774
90%	0.9868	1128.5	0.9498	1096.5	0.9438	1098	0.9521	1023	0.9524
75% Q3	0.9682	645.5	0.9155	720.5	0.9065	729	0.9203	631.5	0.9283
50% Median	0.9238	302.5	0.8506	435.5	0.8625	430	0.8764	378	0.8727
25% Q1	0.8428	150.5	0.7730	216.5	0.8021	238	0.8141	160.5	0.7927
10%	0.7083	65.5	0.6912	93	0.7217	113	0.7333	62.5	0.7106
5%	0.6005	35.5	0.6039	44.5	0.6601	65	0.6630	27	0.6449
1%	0.3750	6	0.3297	25	0.5437	30	0.3922	6	0.4167
0% Min	0.0556	2	0.0000	17	0.3741	15	0.2241	1	0.0244

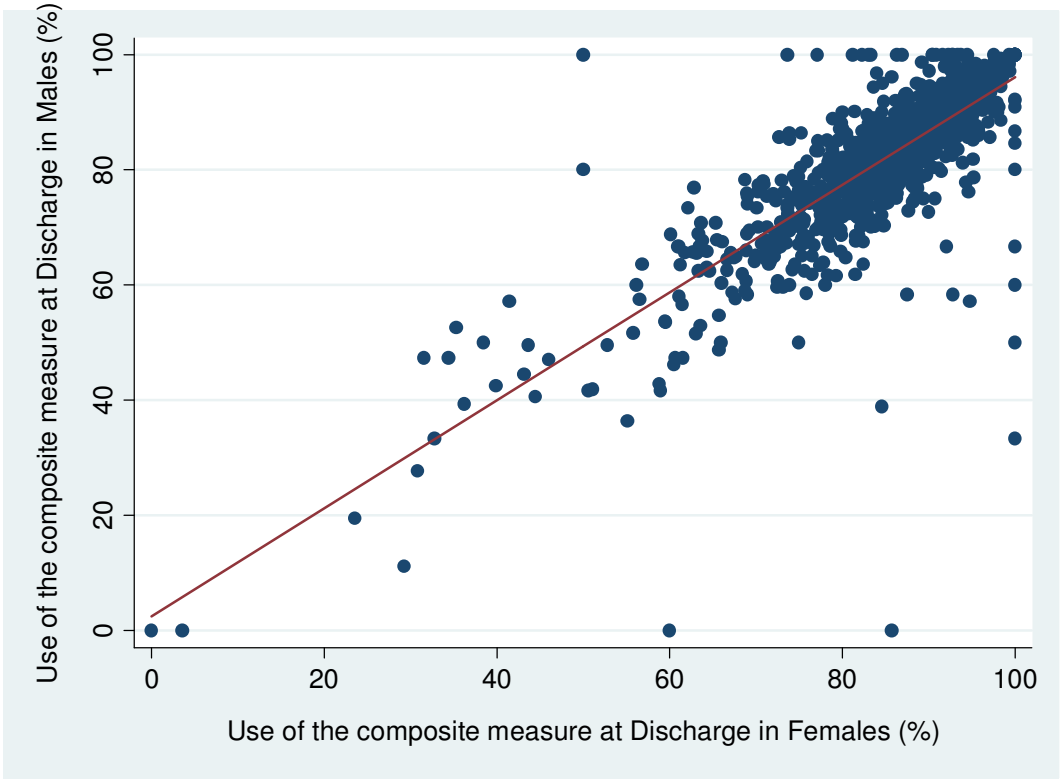
PCI Composite Measure Testing Results (ACC)

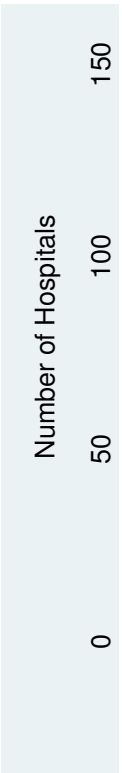


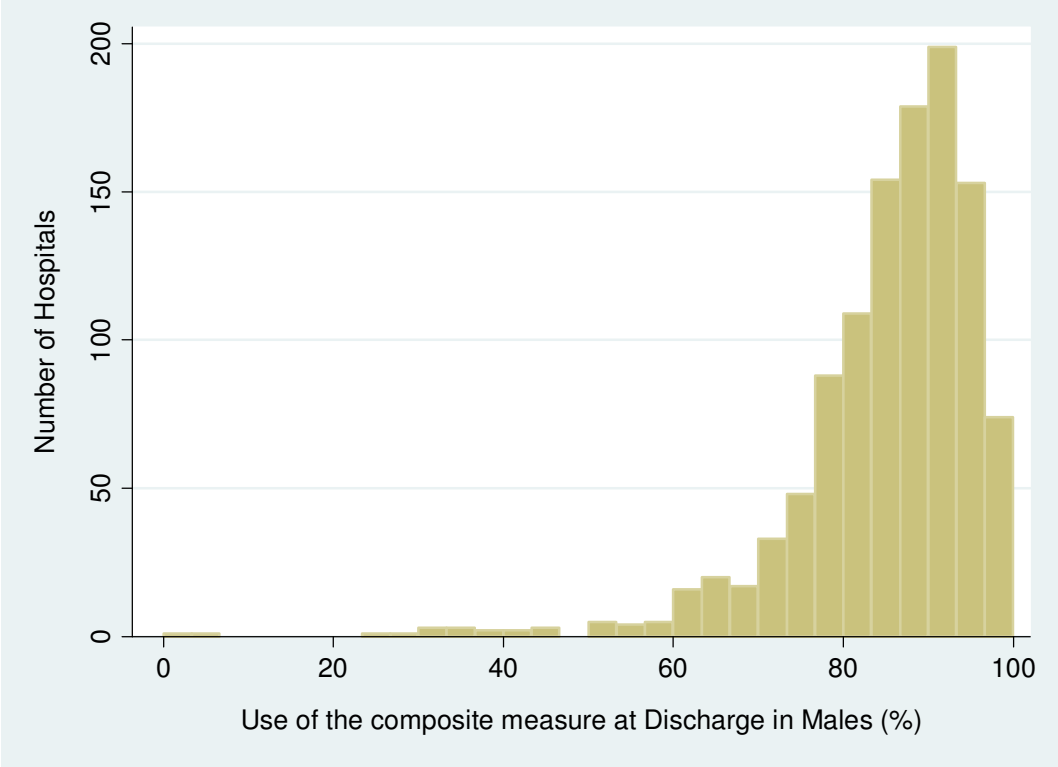
Distribution of PCI Composite Measure at Discharge

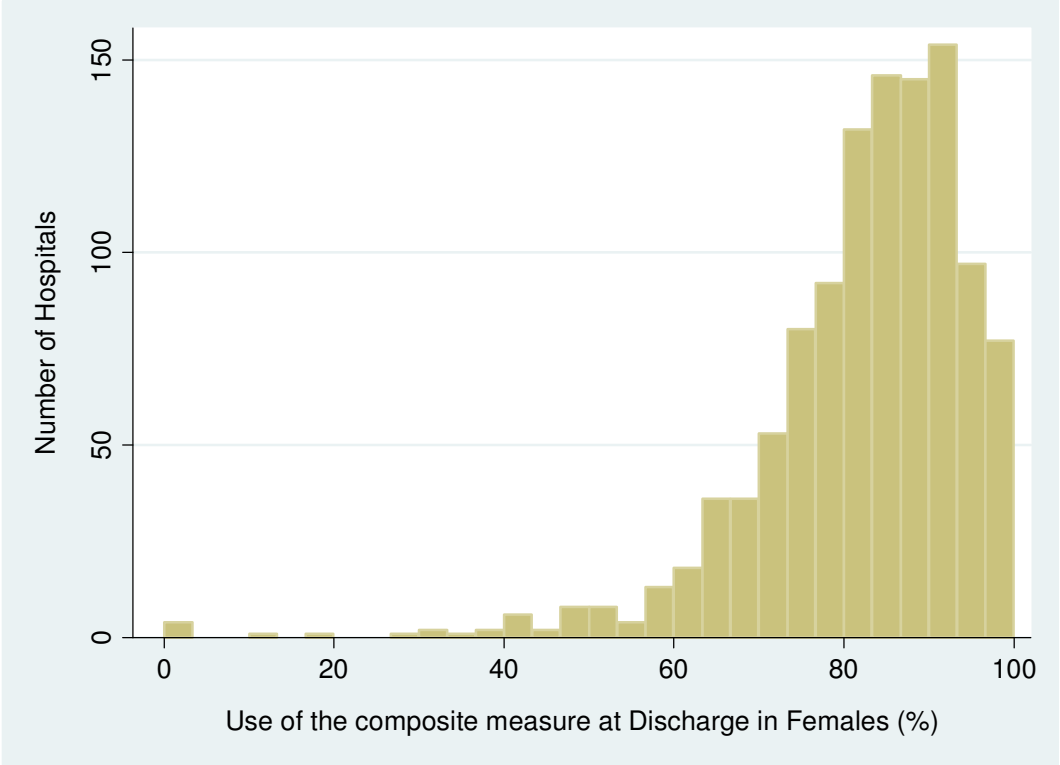
Description	Female			
	Yes		No	
	Volume	DCM	Volume	DCM
N	1119	1119	1121	1121
Mean	166.28	0.8235	343.78	0.8525
Std Deviation	154.73	0.1281	312.29	0.1118
100% Max	1263	1.0000	2408	1.0000
99%	714	1.0000	1536	1.0000
95%	465	0.9792	948	0.9730
90%	361	0.9500	717	0.9557
75% Q3	225	0.9078	468	0.9259
50% Median	124	0.8462	261	0.8759
25% Q1	61	0.7674	124	0.8081
10%	23	0.6711	50	0.7292
5%	13	0.6000	27	0.6436
1%	4	0.3939	10	0.3990
0% Min	1	0.0000	1	0.0000








Number of Hospitals
0
50
100
150
200
0
20
40
60
80
100
Use of the composite measure at Discharge in Males (%)


Number of Hospitals
0
50
100
150
0
20
40
60
80
100
Use of the composite measure at Discharge in Females (%)

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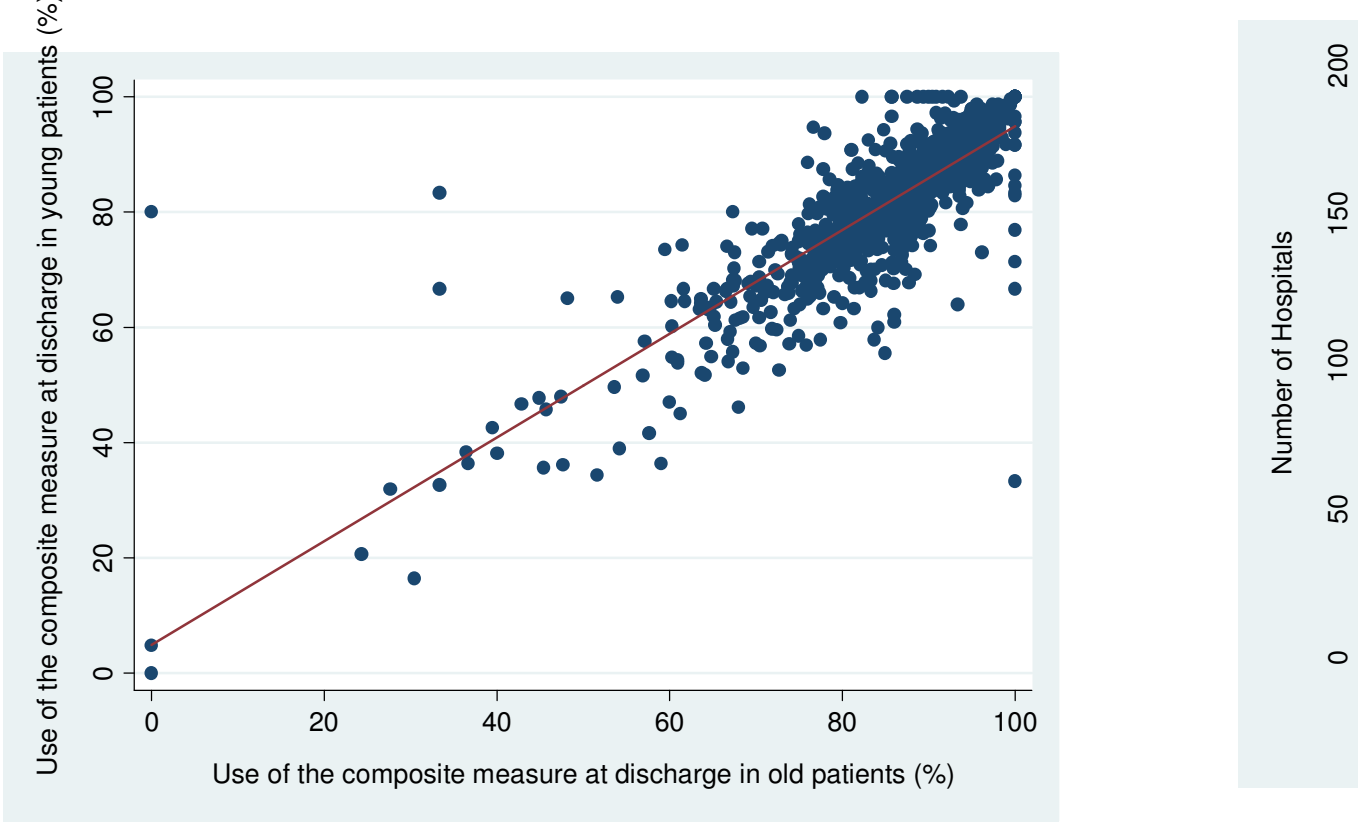
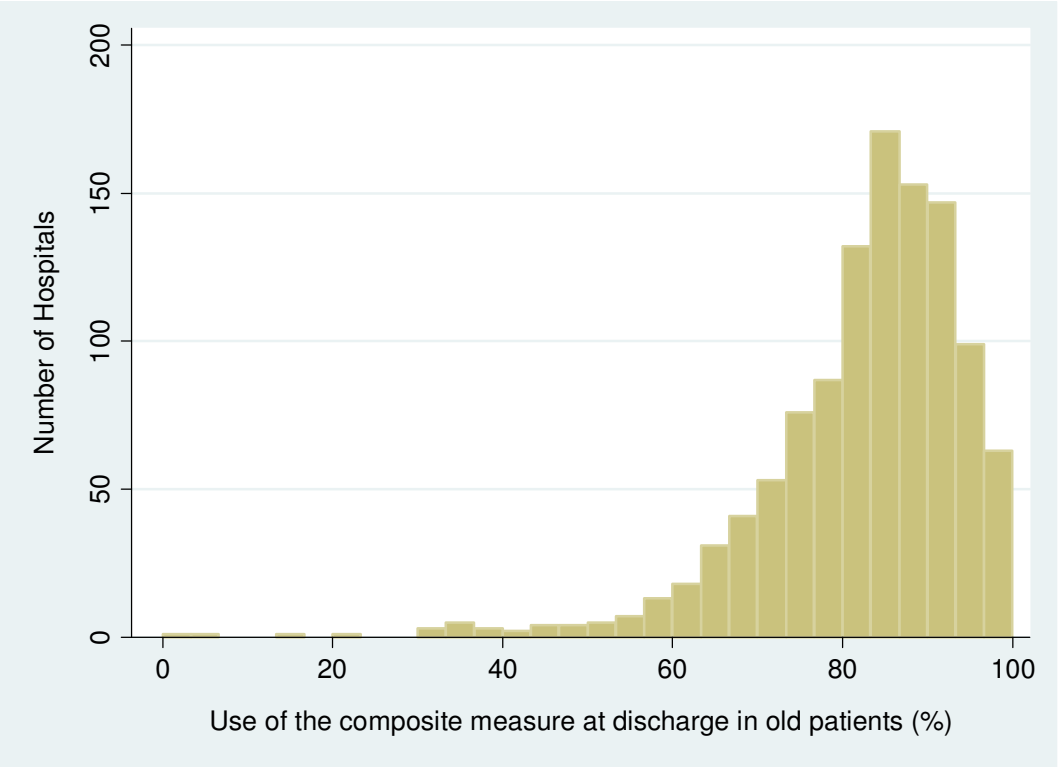
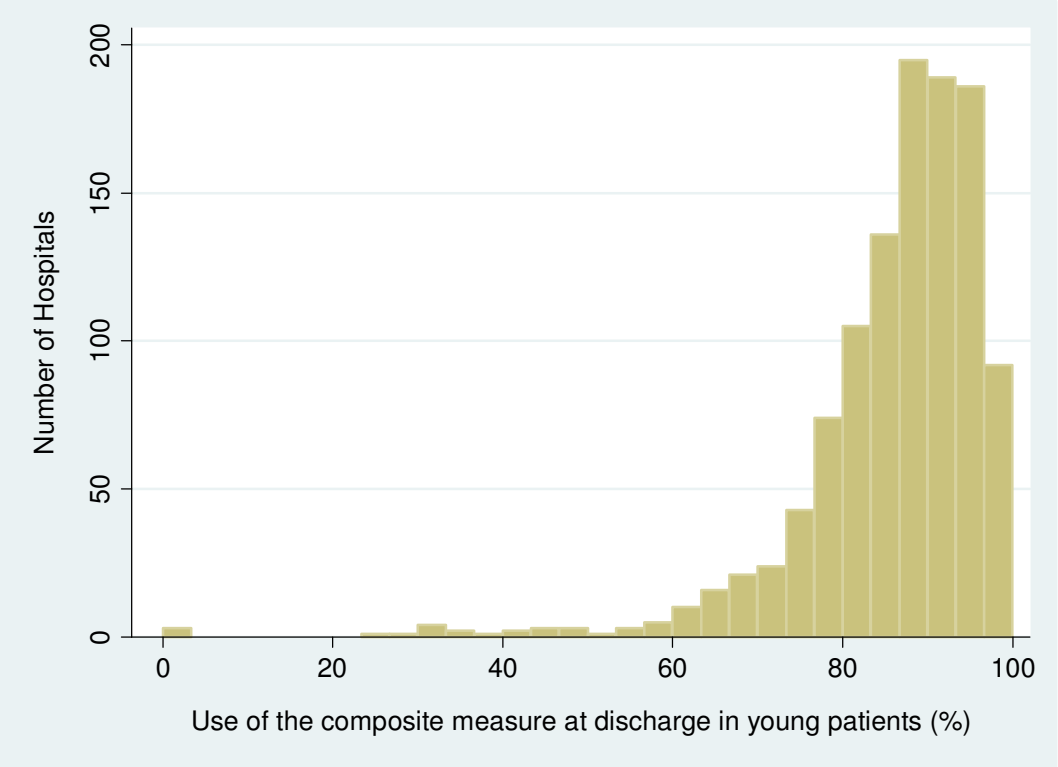
Distribution of The Composite Measure at Discharge

Description	Age >= 65 Yes		No	
	Volume	DCM	Volume	DCM
N	1121	1121	1120	1120
Mean	257.08	0.8246	252.91	0.8608
Std Deviation	240.52	0.1213	231.19	0.1132
100% Max	1792	1.0000	1879	1.0000
99%	1138	1.0000	1149	1.0000
95%	728	0.9690	690	0.9786
90%	548	0.9474	528	0.9612
75% Q3	348	0.9074	338	0.9333
50% Median	190	0.8458	189	0.8839
25% Q1	87	0.7701	95	0.8203
10%	34	0.6768	42	0.7455
5%	16	0.6129	22	0.6680
1%	5	0.3636	8	0.3950
0% Min	1	0.0000	1	0.0000



PCI Composite Measure Testing Results (ACC)

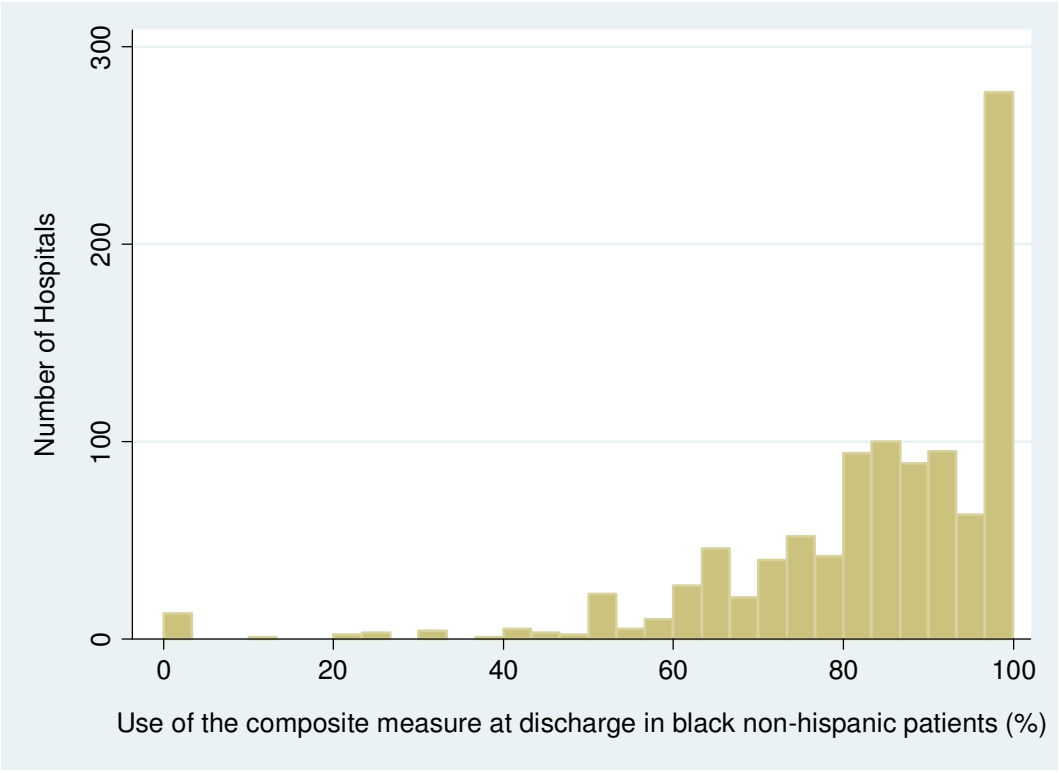


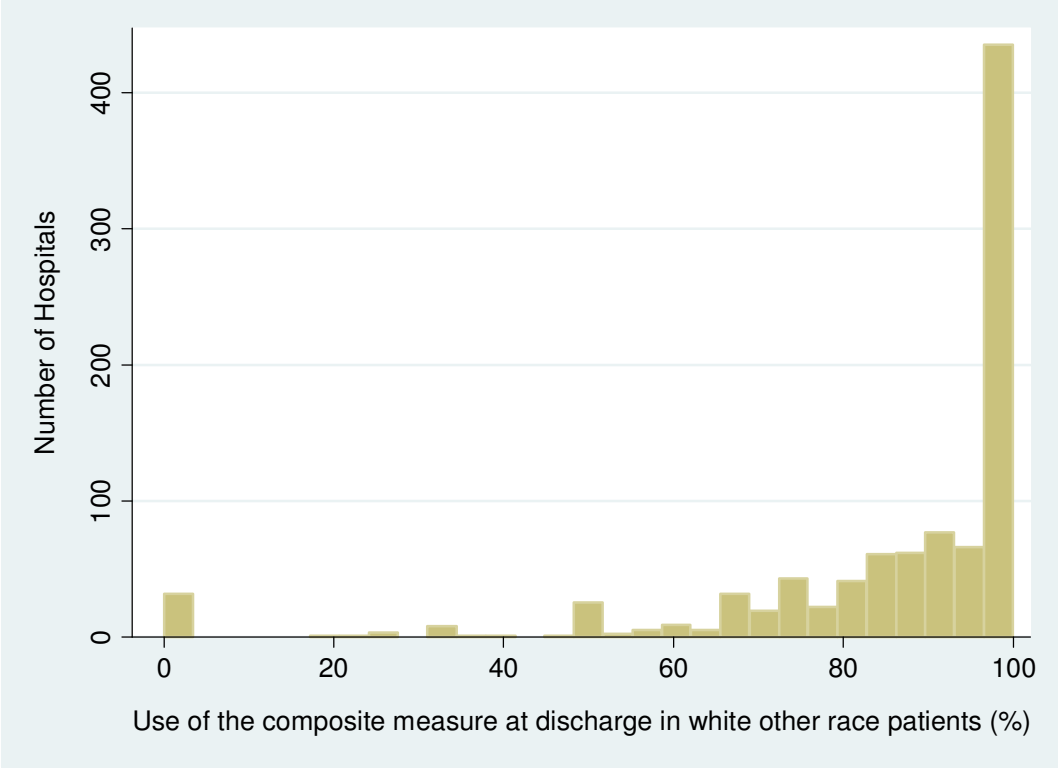


Distribution of The Composite Measure at Discharge Stratified by Hospital %White

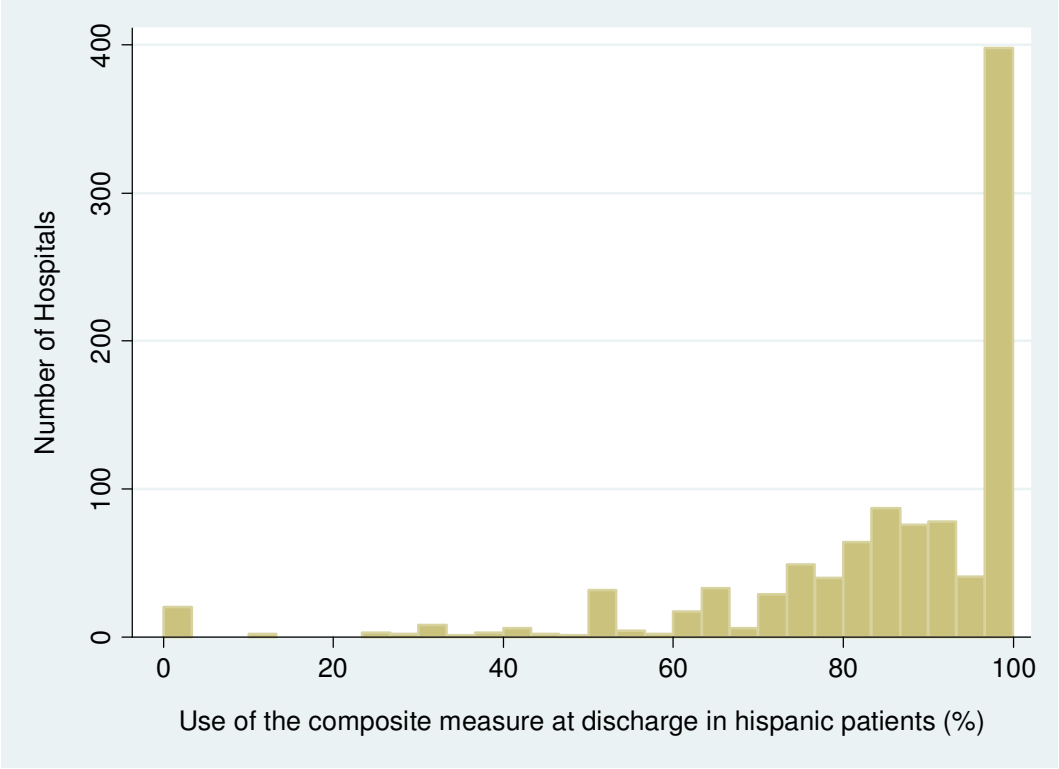
Description	Race							
	Hispanic		White non-hispanic		Black non-Hispanic		Other	
	Volume	DCM	Volume	DCM	Volume	DCM	Volume	DCM
N	1004	1004	1121	1121	1018	1018	952	952
Mean	26.91	0.8513	431.79	0.8439	43.18	0.8369	17.26	0.8622
Std Deviation	57.14	0.1988	408.54	0.1121	73.73	0.1752	32.30	0.2172
100% Max	637	1.0000	2976	1.0000	1002	1.0000	282	1.0000
99%	282	1.0000	1927	1.0000	361	1.0000	192	1.0000
95%	113	1.0000	1234	0.9672	169	1.0000	70	1.0000
90%	67	1.0000	926	0.9516	109	1.0000	42	1.0000
75% Q3	24	1.0000	602	0.9196	47	1.0000	18	1.0000
50% Median	9	0.9048	321	0.8659	17.5	0.8711	7	0.9375
25% Q1	4	0.7895	139	0.7957	6	0.7647	3	0.8110
10%	2	0.6250	53	0.7130	2	0.6364	1	0.6667
5%	1	0.5000	27	0.6432	1	0.5000	1	0.4545
1%	1	0.0000	6	0.4308	1	0.0000	1	0.0000
0% Min	1	0.0000	1	0.0000	1	0.0000	1	0.0000

PCI Composite Measure Testing Results (ACC)





PCI Composite Measure Testing Results (ACC)



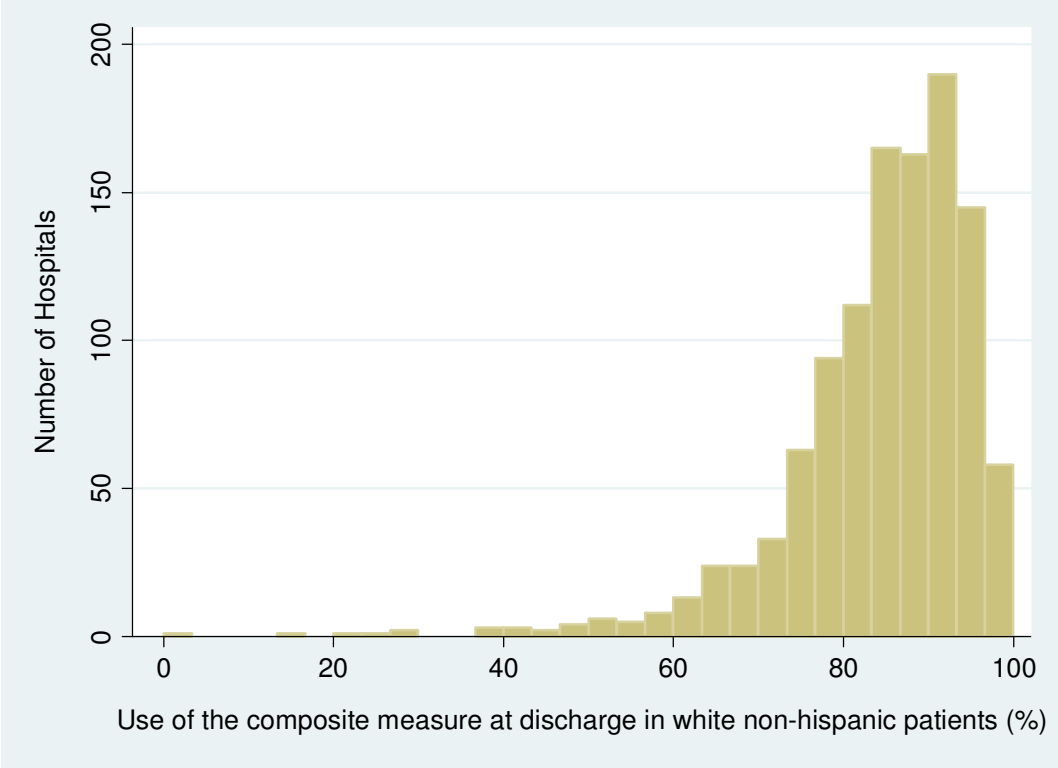


Table Study Sample

Exclusions	Number of Hospital Stay		Number of Patients		Number of Facilities	
	#	%	#	%	#	%
Initial Sample	**4594173**	**100**	**3931296**	**100**	**1089**	**100**
Discharges not between July 2008 and	3315964	72.18	2737465	69.63	38	3.49
Remaining	**1278209**	**27.82**	**1193831**	**30.37**	**1051**	**96.51**
Without PCI during the admission	712139	55.71	670862	56.19	44	4.19
Remaining	**566070**	**44.29**	**522969**	**43.81**	**1007**	**95.81**
Discharge Status: deceased	7519	1.33	7237	1.38	0	0.00
Remaining	**558551**	**98.67**	**515732**	**98.62**	**1007**	**100.00**
Discharge Location: Other hospital	3528	0.63	3340	0.65	0	0.00
Remaining	**555023**	**99.37**	**512392**	**99.35**	**1007**	**100.00**
Not eligible to the composite measure	733	0.13	646	0.13	0	0.00
Study Sample	**554290**	**99.87**	**511746**	**99.87**	**1007**	**100.00**
The composite measure at discharge	469106	84.63	435419	85.08	1006	99.90
Admissions with MI	**167155**	**30.16**	**164662**	**32.18**	**1001**	**99.40**
The composite measure at discharg	148489	88.83	146503	88.97	999	99.80
Amdissions without MI	**387135**	**69.84**	**359908**	**70.33**	**995**	**98.81**
The composite measure at discharg	320617	82.82	299600	83.24	994	99.90

Distribution of The Composite Measure at Discharge

Description	Volume	DCM
N	1007	1007
Mean	550.44	0.8364
Std Deviation	499.88	0.1122
100% Max	3697	1.0000
99%	2511	0.9887
95%	1502	0.9625
90%	1168	0.9474
75% Q3	731	0.9124
50% Median	420	0.8592
25% Q1	210	0.7869
10%	83	0.7038
5%	45	0.6415
1%	13	0.4444
0% Min	1	0.0000

Validation- PCI Composite Measure Testing Results (ACC)