NATIONAL QUALITY FORUM

Memo

June 4, 2018

To: Consensus Standards Approval Committee (CSAC)

From: Cardiovascular Project Team

Re: Cardiovascular, Fall 2017 Cycle

CSAC Action Required

The CSAC will review recommendations from the Cardiovascular project at its June 4-5, 2018 meeting and vote on whether to uphold the recommendations from the Cardiovascular Standing Committee.

This memo includes a summary of the project, recommended measures, and identified themes and responses to the public and member comments. The following documents accompany this memo:

1. Cardiovascular, fall 2017 cycle draft report. The draft report has been updated to reflect the changes made following the Standing Committee's discussion of public and member comments. The complete draft report and supplemental materials are available on the project webpage.
2. Comment Table. Staff has identified themes within the comments received. This table lists 11 comments received during the post-evaluation meeting comment period and the NQF and Standing Committee responses.

Background

Cardiovascular disease (CVD) is the leading cause of death for men and women in the United States. It kills nearly one in four Americans and costs $312 billion per year, more than 10 percent of annual health expenditures.[a] Considering the toll of cardiovascular disease, measures that assess clinical care performance and patient outcomes are critical to reducing the negative impacts of CVD.

NQF's cardiovascular portfolio of measures is one of the largest, and it includes primary prevention and screening, coronary artery disease (CAD), ischemic vascular disease (IVD), acute myocardial infarction (AMI), cardiac catheterization, percutaneous catheterization intervention (PCI), heart failure (HF), rhythm disorders, implantable cardioverter-defibrillators (ICDs), cardiac imaging, cardiac rehabilitation, and high blood pressure measures. Despite the large number of

[a] Agency for Healthcare Research and Quality (AHRQ). *2015 National Healthcare Quality and Disparities Report and 5th Anniversary Update on the National Quality Strategy.* Rockville, MD: AHRQ; 2016. http://www.ahrq.gov/research/findings/nhqrdr/nhqdr15/index.html. Last accessed March 2018.

endorsed measures, gaps remain in patient-reported outcomes and patient-centric composite measures.

In the 2017 fall cycle of this project, the 25-member Cardiovascular Standing Committee met virtually through three measure evaluation web meetings to evaluate one newly submitted measure and four measures undergoing maintenance review against NQF's standard evaluation criteria. The Committee recommended four measures for endorsement, and a developer withdrew one measure from consideration for endorsement. Evaluated measures are in the draft report and are listed by topic.

Draft Report

The Cardiovascular fall 2017 cycle draft report presents the results of the evaluation of five measures considered under the Consensus Development Process (CDP). The Committee recommended four measures for endorsement, and a developer withdrew one from consideration for endorsement.

The measures were evaluated against the 2017 version of the measure evaluation criteria.

	Maintenance	New	Total
Measures under consideration	4	1	5
Measures recommended for endorsement	4	0	4
Measures withdrawn from consideration	0	1	1
Reasons for not recommending:	Importance – 0 Scientific Acceptability – 0 Overall – 0	Importance – 0 Scientific Acceptability – 0 Overall – 0	

CSAC Action Required

Pursuant to the CDP, the CSAC is asked to consider endorsement of four candidate consensus measures.

Measures Recommended for Endorsement

- 0133 In-Hospital Risk Adjusted Rate of Mortality for Patients Undergoing PCI (American College of Cardiology (ACC))

  Overall Suitability for Endorsement: Yes-16; No-0

- 0536 30-Day All-cause Risk-Standardized Mortality Rate following Percutaneous Coronary Intervention (PCI) for Patients with ST Segment Elevation Myocardial Infarction (STEMI) or Cardiogenic Shock (ACC)

Overall Suitability for Endorsement: Yes-18; No-0

- 0642 Cardiac Rehabilitation Patient Referral From an Inpatient Setting (ACC)

  Overall Suitability for Endorsement: Yes-17; No-0

- 0643 Cardiac Rehabilitation Patient Referral From an Outpatient Setting (ACC)

  Overall Suitability for Endorsement: Yes-19; No-0

Comments and Their Disposition

NQF received 11 comments from 10 organizations (including three member organizations) and individuals pertaining to the draft report and to the measures under consideration.

A table of comments submitted during the comment period, with the responses to each comment and the actions taken by the Standing Committee and measure developers, is posted to the Cardiovascular project webpage.

Comment Themes and Committee Responses

Comments about specific measure specifications and rationale were forwarded to the developers, who were invited to respond.

The Committee reviewed all of the submitted comments (general and measure specific) and developer responses. Committee members focused their discussion on measures or topic areas with the most significant and recurring issues. The majority of the comments supported measure 3309 *Risk-Standardized Survival Rate (RSSR) for In-Hospital Cardiac Arrest*, which was ultimately withdrawn from consideration for endorsement by the developer, the American Heart Association, due to errors in its submission.

Member Expression of Support

Throughout the 16-week continuous public commenting period, NQF members had the opportunity to express their support ('support' or 'do not support') for each measure submitted for endorsement consideration to inform the Committee's recommendations. Two NQF members provided their expression of support. Both supported 3309 *Risk-Standardized Survival Rate (RSSR) for In-Hospital Cardiac Arrest* (withdrawn from consideration after vote), and one member supported 0642 *Cardiac Rehabilitation Patient Referral from an Inpatient Setting*. Appendix B details the expression of support.

Appendix A: CSAC Checklist

The table below lists the key considerations to inform the CSAC's review of the measures submitted for endorsement consideration.

Key Consideration	Yes/No	Notes
Were there any process concerns raised during the CDP project? If so, briefly explain.	Yes	The Committee raised concerns with the accuracy of data found in the reliability and validity testing results included in the testing attachment presented by the developer for the reliability of 3309 *RSSR for In-Hospital Cardiac Arrest*; furthermore, this was a concern that was not flagged by the Methods Panel.
Did the Standing Committee receive requests for reconsideration? If so, briefly explain.	No	
Did the Standing Committee overturn any of the Scientific Methods Panel's ratings of Scientific Acceptability? If so, state the measure and why the measure was overturned.	Yes	The Committee did not reach consensus on the reliability of 3309 due to inaccuracies in the data presented in the testing document. The developer submitted a revised testing document during the commenting period. On the post-comment call, the Committee found additional inaccuracies in the data presented in the revised testing document. The developer withdrew the measure from consideration for endorsement prior to the Committee's vote on endorsement consideration.
If a recommended measure is a related and/or competing measure, was a rationale provided for the Standing Committee's recommendation? If not, briefly explain.	No	
Were any measurement gap areas addressed? If so, identify the areas.	No	
Are there additional concerns that require CSAC discussion? If so, briefly explain.	No	

Appendix B: NQF Member Expression of Support Results

Two NQF members provided their expression of support. Two of five measures under consideration received support from NQF members. Results for each measure are provided below.

3309 Risk-Standardized Survival Rate (RSSR) for In-Hospital Cardiac Arrest (American Heart Association): Withdrawn

Member Council	Support	Do Not Support	Total
Health Professional	1	0	1
Provider Organization	1	0	1

0642 Cardiac Rehabilitation Patient Referral from an Inpatient Setting (American College of Cardiology): Recommended

Member Council	Support	Do Not Support	Total
Provider Organization	1	0	1

Appendix C: Details of Measure Evaluation

Rating Scale: H=High; **M**=Moderate; **L**=Low; **I**=Insufficient; **NA**=Not Applicable; **Y**=Yes; **N**=No

0133 In-Hospital Risk Adjusted Rate of Mortality for Patients Undergoing PCI

Submission

Description: Risk adjusted rate of mortality for all patients age 18 and over undergoing PCI.

Numerator Statement: Patients 18 years of age and older with a PCI procedure performed during episode of care who expired

Denominator Statement: Patients 18 years of age and older with a PCI procedure performed during episode of care.

Exclusions: 1. NCDR Registry patients who did not have a PCI (Patient admissions with a diagnostic cath only during that admission);

2. Patient admissions with PCI who transferred to another facility on discharge

Adjustment/Stratification: Other. We have used hierarchical logistic regression to calculate the risks for peri-procedural mortality and use these data to create risk-standardized event rates.

Level of Analysis: Facility

Setting of Care: Inpatient/Hospital

Type of Measure: Outcome

Data Source: Registry Data

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING 01/29/2018

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **Accepted prior evaluation**; 1b. Performance Gap: **H-8**; **M-9**; **L-0**; **I-0**

Rationale:

- The developer provided information on how the use of guidelines, appropriate use criteria, and risk models can lead to a decrease in mortality associated with percutaneous coronary intervention (PCI).
- The Committee expressed the continued importance of this measure to benchmark facilities for quality initiatives and accepted the prior evaluation of evidence without further discussion.
- Data presented by the developer from over 1,500 hospitals and around 700,000 patients demonstrated a variation in performance from 0.96% to 3.0% in 2015, and a similar variation (0.92% to 2.96%) in 2016. The Committee concluded that there is still a performance gap and opportunity for improvement.

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2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity; 2c. For composite measures: Empirical Analysis Supporting Composite))

2a. Reliability: **Accepted prior evaluation;** 2b. Validity: **H-1**; **M-15**; **L-0**; **I-0**

Rationale:

- The developer performed data element and measure score reliability testing with a test-retest and signal to noise analysis. There was no clear misclassification by test-retest reliability for any assessable risk factor greater than 3.5% across all centers, and the average score of the signal to noise analysis was 0.7. The Committee agreed to accept the prior evaluation of the reliability criteria.
- Empirical validity testing of the measure score was assessed by comparing the performance of the risk-adjusted model in the development sample and two validation samples. The developer assessed discrimination in the model with the c-statistic. The developer noted the c-statistic is 0.93, which means that the probability that predicting the outcome is substantially better than chance.
- The Committee questioned if the risk-adjustment model accounted for lower performing institutions possibly having higher risk patients.
- The Committee suggested the developer exclude out-of-hospital cardiac arrests in the future to mitigate risk-averse behavior (e.g., "cherry picking" patients) until there is better risk-adjustment to account for out-of-hospital cardiac arrests. The Committee concluded the measure continues to meet the validity criterion.

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3. Feasibility: H-13; M-3; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed this measure is highly feasible due to being in use for 10 years.

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4. Use and Usability: The measure meets the Use sub-criterion

4a. Use; 4a1. Accountability and transparency; 4a2. Feedback on the measure by those being measured and others; 4b. Usability; 4b1. Improvement; 4b2. The benefits to patients outweigh evidence of unintended negative consequences to patients)

4a. Use: **Pass-16; No Pass-0;** *4b. Usability:* **H-0; M-15; L-0; I-1**

Rationale:

- This measure is currently used in two public reporting programs (Blue Distinction Centers for Cardiac Care and Quality Hospital Insight program for Anthem).
- Because the National Cardiovascular Data Registry (NCDR) CathPCI Registry has been implemented in numerous hospitals for many years and is reproducible, the Committee agreed that this measure is still useful.
- Committee members discussed the potential unintended consequence of facilities or physicians avoiding intervention on very sick patients who could benefit from a PCI.
- The Committee encouraged the developer to provide physician-level data to further increase transparency on the data collected. The developer responded that this is a

facility-level measure not a physician-level measure and data on individual physician performance might be challenging to obtain.

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5. Related and Competing Measures

This measure is related to:

- 0119: Risk-Adjusted Operative Mortality for CABG
- 0230: Hospital 30-day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older
- 2411: Comprehensive Documentation for Indications for PCI
- 2459: In-hospital Risk Adjusted Rate of Bleeding Events for Patients Undergoing PCI
- 0535: 30-day All-Cause Risk-Standardized Mortality Rate Following PCI for Patients Without STEMI and Without Cardiogenic Shock
- 0536: 30-Day All-Cause Risk-Standardized Mortality Rate Following PCI for Patients with STEMI or Cardiogenic Shock

The Committee had discussed these measures during previous phases and no new information warranted another discussion.

Standing Committee Recommendation for Endorsement: **Y-16**; **N-0**

6. Public and Member Comment

No comments were received.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X

8. Appeals

0536 30-Day All-Cause Risk-Standardized Mortality Rate Following Percutaneous Coronary Intervention (PCI) for Patients with ST Segment Elevation Myocardial Infarction (STEMI) or Cardiogenic Shock

Submission

Description: This measure estimates hospital risk-standardized 30-day all-cause mortality rate following percutaneous coronary intervention (PCI) among patients who are 18 years of age or older with STEMI or cardiogenic shock at the time of procedure. The measure uses clinical data available in the National Cardiovascular Data Registry (NCDR) CathPCI Registry for risk adjustment. For the purpose of development and testing, the measure cohort was derived in a Medicare fee-for-service (FFS) population of patients 65 years of age or older with a PCI. For the purpose of maintenance, the measure used a cohort of patients whose vital status was determined from the National Death Index (which reflects an all-payor sample as opposed to

only the Medicare population). This is consistent with the measure's intent to be applicable to the full population of PCI patients.

Numerator Statement: The outcome for this measure is all-cause death within 30 days following a PCI procedure in patients with STEMI or cardiogenic shock at the time of the procedure.

Denominator Statement: The target population for this measure includes inpatient and outpatient hospital stays with a PCI procedure for patients at least 18 years of age, with STEMI or cardiogenic shock at the time of procedure, including outpatient and observation stay patients who have undergone PCI but have not been admitted. It is unlikely that patients in this cohort would not be admitted to the hospital, but we keep this criterion to be consistent with the complementary non-STEMI, non-cardiogenic shock PCI cohort.

Exclusions: Hospital stays are excluded from the cohort if they meet any of the following criteria:

(1) PCIs that follow a prior PCI in the same admission (either at the same hospital or a PCI performed at another hospital prior to transfer).

This exclusion is applied in order to avoid assigning the death to two separate admissions.

(2) For patients with inconsistent or unknown vital status or other unreliable data (e.g. date of death precedes date of PCI);

(3) Subsequent PCIs within 30-days. The 30-day outcome period for patients with more than one PCI may overlap. In order to avoid attributing the same death to more than one PCI (i.e. double counting a single patient death), additional PCI procedures within 30 days of the death are not counted as new index procedures.

(4) PCIs for patients with more than 10 days between date of admission and date of PCI. Patients who have a PCI after having been in the hospital for a prolonged period of time are rare and represent a distinct population that likely has risk factors related to the hospitalization that are not well quantified in the registry.

Adjustment/Stratification: Statistical risk model

Level of Analysis: Facility, Other

Setting of Care: Inpatient/Hospital

Type of Measure: Outcome

Data Source: Claims, Other, Registry Data

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING 01/29/2018

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **Accepted prior evaluation**; 1b. Performance Gap: **H-10**; **M-8**; **L-0**; **I-0**

Rationale:

- The developer referenced literature supporting an association with improved survival and the use of preprocedural clopidogrel and glycoprotein 2b/3a inhibitors; the volume of iodinated contrast; and participation in continuous quality improvement programs. Additionally, the developer provided performance data from 1,276 hospitals and 94,907

admissions from 2011-2014 demonstrating a variation in risk-standardized mortality rates with a range from 4.7% to 15.7%.
- The Committee agreed that the importance of the outcome is self-evident and accepted the prior evaluation without further discussion.
- The developer provided data on the combined risk-standardized mortality rates for all payers and all ages (>18 years) from 1,356 hospitals and 245,877 admissions using NCDR CathPCI data linked with National Death Index (NDI) from 2011-2014. The mean mortality was 8.3% with a range of 4.7 to 15.7%.
- One Committee member asked why the developer was providing data from 2011-2014 in 2018. The developer responded that there is a delay in receiving data from the NDI. Another Committee member expressed concern that the gap appears to be increasing. The developer explained the numbers appear to be increasing due to the addition of previously excluded, often vulnerable, populations. Overall, the Committee agreed that there is a significant performance gap and opportunity for improvement.

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2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity; 2c. For composite measures: Empirical Analysis Supporting Composite))

2a. Reliability: **Accepted prior evaluation;** 2b. Validity: **Accepted prior evaluation**

<u>Rationale</u>:

- The developer provided reliability testing at the data element and performance measure score level. A test-retest approach was performed with an intra-class correlation coefficient (ICC) of 0.122.
- The developer provided validity testing conducted at the data element level with an overall agreement of 92.0%. The validation sample scored 0.83 for the c-statistic.
- The Committee accepted the prior reliability and validity evaluation without further discussion because there was no updated testing since the last submission.

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3. Feasibility: H-5; M-12; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

<u>Rationale</u>:

- The developer stated all measure elements are readily available in electronic sources via administrative claims data, and coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims).
- The developer mentioned several implementation challenges including data availability, patient confidentiality, data cost, and data timeliness; however, the Committee ultimately agreed the measure is feasible despite these implementation challenges.

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4. Use and Usability: <u>The measure meets the Use sub-criterion</u>

4a. Use; 4a1. Accountability and transparency; 4a2. Feedback on the measure by those being measured and others; 4b. Usability; 4b1. Improvement; 4b2. The benefits to patients outweigh evidence of unintended negative consequences to patients)

4a. Use: **Pass-17; No Pass-0;** *4b. Usability:* **H-0; M-11; L-1; I-6**

Rationale:

- The measure is not currently publicly reported. The Committee noted that the Use criterion states that performance results should be used in at least one accountability application within three years of initial endorsement and publicly reported within six years of initial endorsement. While the measure does not meet this requirement, the Committee determined that the developer was putting their best effort forward to achieve this goal and passed the measure on use.
- The Committee expressed concern that it was not possible to determine if progress toward achieving the goal of high quality, efficient healthcare for individuals or populations is occurring. Additionally, the developer has experienced several implementation challenges and there is a risk of harm to the patient if this measure is publicly reported. However, the Committee agreed that the measured was usable despite these issues.

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5. Related and Competing Measures

This measure is related to:

- 0229: Hospital 30-day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Heart Failure (HF) Hospitalization for Patients 18 and Older
- 0230: Hospital 30-day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older
- 0535: 30-day All-Cause Risk-Standardized Mortality Rate Following Percutaneous Coronary Intervention (PCI) for Patients Without ST Segment Elevation Myocardial Infarction (STEMI) and Without Cardiogenic Shock

Committee had discussed these measures during previous phases and no new information warranted another discussion.

Standing Committee Recommendation for Endorsement: **Y-18**; **N-0**

6. Public and Member Comment

No comments were received.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X

8. Appeals

0642 Cardiac Rehabilitation Patient Referral From an Inpatient Setting

Submission

Description: Percentage of patients admitted to a hospital with a primary diagnosis of an acute myocardial infarction or chronic stable angina or who during hospitalization have undergone coronary artery bypass (CABG) surgery, a percutaneous coronary intervention (PCI), cardiac valve surgery (CVS), or cardiac transplantation who are referred to an early outpatient cardiac rehabilitation/secondary prevention program.

Numerator Statement: Number of eligible patients with a qualifying event/diagnosis who have been referred to an outpatient Cardiac Rehabilitation/Secondary Prevention (CR/SP) program prior to hospital discharge or have a documented medical or system reason why such a referral was not made.

(Note: The program may include a traditional CR/SP program based on face-to-face interactions and training sessions or may include other options such as home-based approaches. If alternative CR/SP approaches are used, they should be designed to meet appropriate safety standards and deliver effective, evidence-based services.)

Denominator Statement: Number of hospitalized patients in the reporting period hospitalized with a qualifying cardiovascular disease event/diagnosis who do not meet any of the criteria listed in the denominator exclusion section below.

Exclusions: Exceptions criteria require documentation of one or more of the following factors that may prohibit cardiac rehabilitation participation:

-Medical factors (e.g., patient deemed by provider to have a medically unstable, life-threatening condition).

-Health care system factors (e.g., no cardiac rehabilitation/secondary prevention (CR/SP) program available within 60 min of travel time from the patient's home).

The only exclusion criterion for this measure is noted below:

-Patients who expired before discharge.

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Facility, Clinician : Group/Practice, Clinician : Individual

Setting of Care: Inpatient/Hospital

Type of Measure: Process

Data Source: Electronic Health Records, Paper Medical Records, Registry Data

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING 01/30/2018

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **Accepted prior evaluation**; 1b. Performance Gap: **H-1**; **M-16**; **L-0**; **I-0;**

Rationale:

- The developer cited systematic reviews of six ACCF/AHA guidelines with grading of the evidence for referral to cardiac rehabilitation for different heart disease/conditions. The

quality, quantity, and consistency (QQC) is not provided for each of the six guidelines, but evidence grades are defined.
- The developer stated that two new studies were added to support the evidence.
- The Committee noted that the additional evidence provided by the developer has strengthened the importance of this measure. The Committee accepted the prior evaluation without further discussion.
- The developer provided new 2015-2016 performance rates from two registries. The ACTION registry demonstrated a percentage range from 77.0-79.0% and the CathPCI registry demonstrated a percentage range from 61.0-63.0%. The developer also provided 2012 disparities data from these two registries by gender, race, insurance, hospital teaching status, and hospital community.
- The Committee agreed there is an opportunity for improvement in care related to cardiac rehabilitation referral for hospitalized patients after certain cardiac events.

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2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity; 2c. For composite measures: Empirical Analysis Supporting Composite))

2a. Reliability: **Accepted prior evaluation;** 2b. Validity: **Accepted prior evaluation**

<u>Rationale</u>:

- For reliability, empirical testing was conducted with three samples: seven hospitals using either paper or EHR records, the ACC/AHA ACTION-GWTG Registry, and the ACC CathPCI Registry. At the data element level, the seven hospitals demonstrated reliability using intra-rater and inter-rater agreement between patient record reviews for two abstractors – inter-rater reliability for eligibility for CR – 95.0% (Kappa 0.77); referral to CR – 84.0% (Kappa 0.70); exceptions – 97.0% (Kappa 0.79). At the measure score level, a signal-to-noise analysis for both registries scored 0.99, above the accepted threshold of 0.7 for reliability.
- To demonstrate validity of the measure, the developer provided face validity. The measure score was assessed by 27 expert panel members of three ACC or AHA committees; 93.0% of the expert panel strongly supported the measure to accurately distinguish good and poor quality. The developer stated that they aim to obtain additional empirical validity testing data for future iterations of this measure as time allows.
- The Committee accepted the prior reliability and validity evaluation without further discussion because there was no updated testing since the last submission.

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3. Feasibility: H-1; M-15; L-1; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

<u>Rationale</u>:

- All the data elements are captured in electronic clinical data. However, the developer states that the data are abstracted from a record by a third party other than the individual obtaining the original information.
- A Committee member expressed concerns with the cost to participate in the CathPCI and ACTION registries and its low participation rate, which may affect feasibility.

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4. Use and Usability: <u>The measure meets the Use sub-criterion</u>

4a. Use; 4a1. Accountability and transparency; 4a2. Feedback on the measure by those being measured and others; 4b. Usability; 4b1. Improvement; 4b2. The benefits to patients outweigh evidence of unintended negative consequences to patients)

4a. Use: **Pass-18; No Pass-0;** *4b. Usability:* **H-3; M-13; L-0; I-2**

<u>Rationale</u>:

- This measure is in use for Professional Certification or Recognition Program ACTION Registry Achievement Award. This measure is also in use by three quality improvement programs for benchmarking or specific to an organization. The quality improvement programs are: (1) NCDR CathPCI registry, (2) NCDR ACTION registry, and (3) ACC Patient Navigator. The developer indicate planned use is public reporting and hopes to expand the use of this measure in other payment programs (e.g., accountable care organizations, Medicare Advantage insurance plans, other health plans on the insurance marketplace).
- The developer stated that ACC has made a decision to voluntarily publicly report out of the ACTION and CathPCI registries.

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5. Related and Competing Measures

This measure is related to:

- 0071: Persistence of Beta-Blocker Treatment After a Heart Attack
- 0090: Emergency Medicine: 12-Lead Electrocardiogram (ECG) Performed for Non-Traumatic Chest Pain
- 0137: Angiotensin Converting Enzyme Inhibitors (ACEI) or Angiotensin Receptor Blockers (ARB) for Left Ventricular Systolic Dysfunction- Acute Myocardial Infarction (AMI) Patients
- 0142: Aspirin Prescribed at Discharge for AMI
- 0230: Hospital 30-day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older
- 0290: Median Time to Transfer to Another Facility for Acute Coronary Intervention
- 0643: Cardiac Rehabilitation Patient Referral From an Outpatient Setting
- 0730: Acute Myocardial Infarction (AMI) Mortality Rate
- 0964 Therapy with Aspirin, P2Y12 Inhibitor, and Statin at Discharge Following PCI in Eligible Patients
- 2377: Defect Free Care for AMI
- 2379: Adherence to Antiplatelet Therapy after Stent Implantation
- 2452 PCI: Post-Procedural Optimal Medical Therapy [clinician]
- 2473: Hybrid Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) following Acute Myocardial Infarction (AMI) eMeasure

Committee had discussed these measures during previous phases and no new information warranted another discussion.

Standing Committee Recommendation for Endorsement: **Y-17**; **N-0**

6. Public and Member Comment

One comment in support of the measure was received.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X

8. Appeals

0643 Cardiac Rehabilitation Patient Referral From an Outpatient Setting

Submission

Description: Percentage of patients evaluated in an outpatient setting who in the previous 12 months have experienced an acute myocardial infarction or chronic stable angina or who have undergone coronary artery bypass (CABG) surgery, a percutaneous coronary intervention (PCI), cardiac valve surgery (CVS), or cardiac transplantation, who have not already participated in an early outpatient cardiac rehabilitation/secondary prevention program for the qualifying event, and who are referred to an outpatient cardiac rehabilitation/secondary prevention program.

Numerator Statement: Number of patients in an outpatient clinical practice who have had a qualifying event/diagnosis during the previous 12 months, who have been referred to an outpatient Cardiac Rehabilitation/Secondary Prevention (CR/SP) program. (Note: The program may include a traditional CR/SP program based on face-to-face interactions and training sessions or may include other options such as home-based approaches. If alternative CR/SP approaches are used, they should be designed to meet appropriate safety standards and deliver effective, evidence-based services.)

Denominator Statement: Number of patients in an outpatient clinical practice who have had a qualifying cardiovascular event in the previous 12 months and who do not meet any of the criteria listed in the denominator exclusion section below, and who have not participated in an outpatient cardiac rehabilitation program since the qualifying event/diagnosis.

Exclusions: Exceptions criteria require documentation of one or more of the following factors that may prohibit cardiac rehabilitation participation: Medical factors (e.g., patient deemed by provider to have a medically unstable, life-threatening condition). Health care system factors (e.g., no cardiac rehabilitation/secondary prevention (CR/SP) program available within 60 min of travel time from the patient's home).

The only exclusion criterion for this measure is noted below: Patients already referred to CR from another provider/facility and/or was participating in CR prior to encounter with provider at the current office/facility.(1) When the provider discusses CR/SP referral with the patient, if the patient indicates that he/she has already been referred to CR/SP, then that provider would not

be expected to make another referral. However, the provider should document that information in the medical record.

Adjustment/Stratification: No risk adjustment or risk stratification.

Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Integrated Delivery System

Setting of Care: Outpatient Services

Type of Measure: Process

Data Source: Electronic Health Records, Registry Data

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING 01/30/2018

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **Accepted prior evaluation**; 1b. Performance Gap: **H-5**; **M-8**; **L-3**; **I-1;**

Rationale:

- The developer cited systematic reviews of six ACCF/AHA guidelines with grading of the evidence for referral to cardiac rehabilitation for different heart disease/conditions. No QQC is provided for each of the six guidelines, but evidence grades are defined.
- The developer stated that two new studies were added to evidence, an AHA/ACC guideline for the management of patients with non-ST-elevation (NSTE) acute coronary syndromes (ACS), and a new study conducted from the Cochrane systematic review.
- A Committee member expressed the importance of this measure and several agreed with the moderate rating. The Committee accepted the prior evaluation without further discussion.
- The developer provided 2015-2016 performance scores from the ACC PINNACLE registry. For 2015, the mean was 5.51% based on data from 4,954 providers and 27,0448 patients. For 2016, the mean was 5.42% based on data from 2,752 providers and 21,6773 patients.
- The developer also provided 2015-2016 disparities data that were stratified by gender, age, insurance status, and race as mean results and decile. The data demonstrated a range of 0-9.73% for 2015 and a range of 0-1.56% in 2016. The Committee expressed its support for this measure because this is one of the few ambulatory measures that examines disparities, thereby providing needed information on current gaps and playing an important role in providing population health information.

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2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity; 2c. For composite measures: Empirical Analysis Supporting Composite))

2a. Reliability: **Accepted prior evaluation;** 2b. Validity: **M-17**; **L-1**; **I-1**

Rationale:

- The developer performed data element and measure score reliability testing by conducting intra- and inter-rater reliability using pooled abstracted data from the Cardiac Rehabilitation Referral Performance Measure from an outpatient setting and a signal-to-noise analysis using PINNACLE 2012 data. The developer presented data with an intra-rater percent agreement ranging from 96.0-100.0% with the Kappa ranging from 0.76-1.0 and inter-rater percent agreement ranging from 86.0-97.0% with the Kappa ranging from 0.65-0.89 for the various aspects of the measure. The developer also found a signal-to-noise ratio of 0.99 for all quartiles. The Committee accepted the prior evaluation of the reliability criteria without further discussion.
- Face validity of the measure score was assessed by 27 members of three separate ACC and AHA committees. It was determined that 93.0% of respondents either agree or strongly agree that the outpatient measure can accurately distinguish good and poor quality.
- The Committee expressed this is an important measure, however, recommended improving the documentation of this measure.

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3. Feasibility: H-2; M-17; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- Some of the data elements are captured in electronic clinical data, but the developer mentioned that ACC is currently developing a common data dictionary mapped to coded terminology standards that may improve interoperability with EHRs and potentially create eMeasures. However, the developer states that the data are abstracted from a record by a third party other than the individual obtaining the original information.
- The Committee did not have any concerns with the feasibility of the measure.

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4. Use and Usability: The measure meets the Use sub-criterion

4a. Use; 4a1. Accountability and transparency; 4a2. Feedback on the measure by those being measured and others; 4b. Usability; 4b1. Improvement; 4b2. The benefits to patients outweigh evidence of unintended negative consequences to patients)

4a. Use: **Pass-18; No Pass-0;** *4b. Usability:* **H-0; M-19; L-0; I-0**

Rationale:

- This measure is in use publicly on Physician Compare, payment program, and quality improvement. The quality improvement program, specifically PINNACLE Registry is in use for benchmarking or specific to an organization. The developer noted that this measure is also in use in the Merit-based Incentive Payment System (MIPS), a payment program, which is part of the quality payment program (QPP).
- The Committee recommended that the measure be implemented beyond cardiology, and to be use in other settings (e.g., primary care settings); and increase use of the information by the public. The Committee also recommended that the developer provide additional data regarding the impact of this measure in increasing cardiac rehabilitation referrals.

5. Related and Competing Measures

This measure is related to:

- 0071: Persistence of Beta-Blocker Treatment After a Heart Attack
- 0090: Emergency Medicine: 12-Lead Electrocardiogram (ECG) Performed for Non-Traumatic Chest Pain
- 0137: ACEI or ARB for Left Ventricular Systolic Dysfunction- Acute Myocardial Infarction (AMI) Patients
- 0142: Aspirin Prescribed at Discharge for AMI
- 0230: Hospital 30-day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older
- 0290: Median Time to Transfer to Another Facility for Acute Coronary Intervention
- 0642: Cardiac Rehabilitation Patient Referral From an Inpatient Setting
- 0730: Acute Myocardial Infarction (AMI) Mortality Rate
- 0964 Therapy with Aspirin, P2Y12 Inhibitor, and Statin at Discharge Following PCI in Eligible Patients
- 2377: Defect Free Care for AMI
- 2379: Adherence to Antiplatelet Therapy after Stent Implantation
- 2452 PCI: Post-Procedural Optimal Medical Therapy [clinician]
- 2473: Hybrid Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) following Acute Myocardial Infarction (AMI) eMeasure

Committee had discussed these measures during previous phases and no new information warranted another discussion.

Standing Committee Recommendation for Endorsement: **Y-19**; **N-0**

6. Public and Member Comment

No comments were received.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X

8. Appeals

3309 Risk-Standardized Survival Rate (RSSR) for In-Hospital Cardiac Arrest

Submission

Description: This measure estimates a hospital -level risk standardized survival rate (RSSR) for patients aged 18 years and older who experience an in-hospital cardiac arrest.

Numerator Statement: Patients who were alive at discharge

Denominator Statement: Patients aged 18 years and older with in-hospital cardiac arrest who received chest compression and/or defibrillation

Exclusions: None

Adjustment/Stratification: Statistical risk model

Level of Analysis: Facility
Setting of Care: Emergency Department and Services, Inpatient/Hospital
Type of Measure: Outcome
Data Source: Registry Data
Measure Steward: American Heart Association

STANDING COMMITTEE MEETING 01/31/2018

1. Importance to Measure and Report: The measure meets the Importance criteria
(1a. Evidence, 1b. Performance Gap)
1a. Evidence: **Y-17; N-2;** 1b. Performance Gap: **H-4**; **M-11**; **L-1**; **I-3**
Rationale:

- The developer outlines several care processes that can be undertaken by the provider to influence patient survival at discharge, such as the utilization of increased training of staff in resuscitation procedures (including the use of mock codes), earlier recognition of patients in cardiac arrest and shorter staff response time, and improved quality of chest compressions. The developer noted that survival rates post-in-hospital cardiac arrest have shown improvement with facility participation in the Get With The Guidelines-Resuscitation Registry (from 16.0% up to 24.0% from 2010 to 2013), which could be linked to improved resuscitation care (Girota, et. al., 2012).
- The Committee noted the documentation provided supported the developer's claim but did not prove it. However, the Committee agreed that there was evidence to support this measure despite the limitations outlined by the literature and developer.
- Based on the performance of 312 hospitals, the developer cited a mean of 0.24. The Committee expressed concerns that the sample was not large or diverse enough to truly capture the current performance gap, however, agreed there was enough information to determine that there was a gap in this area.

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2. Scientific Acceptability of Measure Properties: Consensus was not reached on the Reliability portion of the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity; 2c. For composite measures: Empirical Analysis Supporting Composite))
2a. Reliability: **H-0**; **M-11**; **L-0**; **I-8;** 2b. Validity: **M-14**; **L-1**; **I-4**
Rationale:

- The Committee had several concerns about the specifications. Committee members questioned why the measure was limited to chest compressions and/or defibrillation. The developer stated other incidents, such as ventricular fibrillation, were too uncommon to include in the measure. The Committee also noted the absence of a "transferred" category in the specifications. The developer clarified that patients who are transferred to another facility are treated as leaving the hospital alive.
- The developer provided reliability testing at the performance measure score level. Signal-to-noise ratio testing was conducted by fitting a hierarchical, logistic regression

model to derive the two shape parameters – alpha and beta; the model was built on a specified beta-binomial distribution. This modeling was done on patient-level data, adjusting for age, gender, location of arrhythmia (i.e., ICU, ED), type of heart rhythm, and present on arrival (POA) conditions.

- A total of 326 hospitals reported on this measure. Of these, 312 hospitals had all the required data elements and met the minimum number of quality reporting events (1) for inclusion in the analysis. The developer found a signal-to-noise ratio reliability of 0.70, at the average number of events. At the minimum number of events, reliability was 0.693. When questioned about including only 312 hospitals, the developer stated reporting the measure was optional and the other hospitals did not provide the necessary information.
- A committee member noted there were several discrepancies in the data provided. The developer stated that of the 312 hospitals, the range of cardiac arrest quality reporting events was 1 to 122, and then listed 190 as the average. The developer acknowledged this error and stated the range should be 10 to 1220. The Committee did not reach consensus on the reliability of the measure.
- The developer provided validity testing conducted at the performance measure score level using face validity. The developer presented a frequency distribution of ratings, from 1 to 5, with a mean of 6.8. The developer stated this was also incorrect and the mean was actually 3.7. The developer stated that 71.0% of the 34 member expert panel either agreed or strongly agreed that this measure can accurately distinguish good and poor quality. The Committee agreed the measure was valid.
- The developer withdrew the measure for consideration during the post-comment call and plans to submit in a future cycle.

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3. Feasibility: H-1; M-14; L-1; I-3

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The developer stated that all measure elements are readily available in electronic sources via administrative claims data, and coded by someone other than the person obtaining the original information. The Committee agreed the measure is feasible.

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4. Use and Usability

4a. Use; 4a1. Accountability and transparency; 4a2. Feedback on the measure by those being measured and others; 4b. Usability; 4b1. Improvement; 4b2. The benefits to patients outweigh evidence of unintended negative consequences to patients)

4a. Use: **Pass-16; No Pass-3;** *4b. Usability:* **H-1; M-14; L-0; I-3**

Rationale:

- The measure is being used in the American Heart Association Get With The Guidelines-Resuscitation Professional Certification or Recognition Program. Participants in the Get With The Guidelines-Resuscitation program have access to their data through the

registry (also called the Patient Management Tool), where they are able to query and review results. Additionally, participants receive a separate feedback report, available as a pdf download, of their risk-standardized in-hospital cardiac arrest results.
- The developer states that survival rates after in-hospital cardiac arrest had started to improve prior to the introduction of the feedback reports regarding results on the risk-standardized in-hospital cardiac arrest survival.
- Overall, the Committee agreed the measure met the Use and Usability criterion.

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5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: **Y-X**; **N-X**

6. Public and Member Comment

NQF received 10 post-evaluation comments in support of recommending the measure for endorsement. One commenter suggested that the developer provide empirical validity testing at the time of maintenance, and another suggested that the Scientific Methods Panel's evaluation be discussed prior to Committee vote. This measure was withdrawn from review by the developer during the post-comment call.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X

8. Appeals