NATIONAL QUALITY FORUM

TO: NQF Members

FR: NQF Staff

RE: Voting draft for *National Voluntary Consensus Standards for Patient Outcomes, First Report for Phases 1 and 2: A Consensus Report*

DA: July 8, 2010

Background

To date NQF has endorsed more than 200 outcome measures in a variety of topic areas. As greater focus is placed on evaluating the outcomes of episodes of care, additional measures of patient outcomes are needed to fill gaps in the current portfolio. The results or outcomes of an episode of healthcare are inherently important because they reflect the reason consumers seek healthcare (e.g., to improve function, decrease pain, or survive), as well as the result healthcare providers are trying to achieve. Outcome measures also provide an integrative assessment of quality reflective of multiple care processes across the continuum of care. There are a variety of types of outcome measures such as health or functional status, physiologic measurements, adverse outcomes, patient experience with care, and morbidity and mortality. NQF's multi-phase Patient Outcomes project seeks to expand NQF's portfolio of outcome measures.

Comments and Revised Draft Report

The comment period for the draft report, *National Voluntary Consensus Standards for Patient Outcomes, First Report for Phases 1 and 2: A Consensus Report*, concluded on June 7, 2010. NQF received 235 comments from 42 organizations on the draft report. The breakdown of the comments by Member Council is as follows:

Consumers – 2	Health Professionals – 14
Purchasers – 3	Public Health/Community – 0
Health Plans – 4	QMRI – 3
Providers – 7	Supplier and Industry – 2
Non-members – 7	

All measure-specific comments were forwarded to the measure developers, who were invited to respond.

A table of detailed comments submitted during the review period, with responses and actions taken by the Steering Committee, is posted on the NQF voting webpage.

Comments and Their Disposition

General comments

The Committee noted that numerous comments were supportive of the report's recommendations. Several comments addressed issues such as age inclusions, disparities, and risk modeling that the Committee had already discussed in detail prior to making its recommendations.

Risk modeling
The Committee discussed comments addressing the use of hierarchical modeling that may reduce variation in the results to the point where it would be viewed as not useful for public reporting. Committee members agreed that this issue is global to NQF rather than specific to the Outcomes project. The Committee recommended that NQF provide additional guidance in the measure evaluation criteria regarding the evaluation of risk models.

Action taken: The Committee believed that the issue regarding the criteria for evaluating risk models is global to NQF rather than specific to the Outcomes project and recommended that NQF consider additional criteria for evaluating risk models for all of NQF's work. The Consensus Standards Approval Committee (CSAC) will consider the issue of evaluating risk models at the July 2010 meeting.

ED visit measures not recommended as stand-alone measures
The Committee considered comments disagreeing with its decision not to recommend the ED visit measures for AMI (OT1-002-09) and heart failure (OT1-006-09). The Committee noted that the vote not to recommend this measure originally had been close and considered whether another vote should be taken.

Action taken: After discussion of the comments, the Committee decided that it supported its original recommendation not to recommend these measures.

Measure-specific comments

ICD implantation complications (OT1-007-90) and PCI readmission (OT1-008-09)
The Steering Committee noted a philosophical difference among stakeholders. Many supported a patient-centered, episode of care perspective in which a procedure is a part of the overall care for a chronic condition. Dissenting comments advocated for a focus on the immediate and related aspects of the procedure only. The Steering Committee strongly supported the patient-centered approach.

Action taken: Additional explanation of the Committee's rationale for recommending the measures is included in the report.

Care transition measures for heart failure (OT1-017-09) and AMI (OT1-016-09)
The Committee noted that comments addressed issues such as the arbitrariness of weightings, positive and negative aspects of the measures, variation in post-discharge follow-up, and the presentation of the results when publicly reported. Several comments suggested that all component measures within a composite measure should also be endorsed. If they are not, then the composite should not be endorsed.

Action taken: To address these comments, additional information regarding the evaluation of composite measures and NQF's composite measures framework and evaluation criteria has been added to the report. The composite measure criteria indicate an expectation that all components of a measure be transparent and meet all of the NQF measure evaluation criteria but do not necessarily need to be deemed appropriate for public reporting as individual measures.

In response to a comment that the measures are untested, the measure developer clarified that the entire Medicare Fee for Service (FFS) dataset for these discharge diagnoses was used to develop and test the composite measures.

Action taken: Information regarding testing is available on the measure submission form and the comment table. The Committee noted that although the measure has been tested it has not yet been deployed and results have not been provided to hospitals.

HRQoL in COPD patients (OT1-019-09)
In response to the comment that there is not a standardized tool for assessing HRQoL, the Committee suggested that the testing of this measure includes a comparison of tools.

Action taken: The Committee's suggestions regarding testing have been forwarded to the measure developers along with NQF's testing requirements in the time-limited endorsement policy.

Functional capacity in COPD patients (OT1-020-09)
Several comments highlighted an inconsistency in the specifications of the measure (target of 25 m instead of 54 m) compared to the discussion.

Action taken: The measure developers have changed the specifications (see Appendix A).

ICU LOS (OT1-023-09) and ICU Mortality (OT1-024-09)
There were a few comments that questioned the use of these measures at the clinician level of analysis. The measure developer agreed that these measures are not intended for use at the clinician level. The Committee considered the measure developer's response to comments regarding the appropriateness of reporting both observed and adjusted results. The measure developer responded that in California only the adjusted results are publicly reported, but both the observed and adjusted results are reported to the providers. The Committee determined that the response was reasonable. The Committee acknowledged the comments that disagreed with the recommendation to endorse the measure. Commenters noted that ICU patients and facilities are quite variable, and the measure takes into account system factors. However, the Committee was not compelled to change its recommendation to endorse the measures.

Action taken: The measure developer removed "clinician" from both measure submission forms.

NQF Member Voting

Information for electronic voting has been sent to NQF Member organization primary contacts. Accompanying comments must be submitted by e-mail and must identify submitter, organization, and the specific ballot item that the comments accompany.

Please note that voting concludes on Friday, August 6, 2010, at 6:00 PM (ET) – no exceptions.

NATIONAL QUALITY FORUM

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, FIRST REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT

DRAFT REPORT FOR VOTING

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EXECUTIVE SUMMARY

The results or outcomes of an episode of healthcare are inherently important because they reflect the reason consumers seek healthcare (e.g., to improve function, decrease pain, or survive), as well as the result healthcare providers are trying to achieve. Outcome measures also provide an integrative assessment of quality reflective of multiple care processes across the continuum of care. There are a variety of types of outcome measures such as health or functional status, physiologic measurements, adverse outcomes, patient experience with care, and morbidity and mortality. To date the National Quality Forum (NQF) has endorsed more than 200 outcome measures in a variety of topic areas. As greater focus is placed on evaluating the outcome of episodes of care, additional measures of patient outcomes are needed to fill gaps in the current portfolio.

This report presents the results of the evaluation of 12 measures considered under NQF's Consensus Development Process. Eight measures are recommended for endorsement as voluntary consensus standards suitable for public reporting and quality improvement.

- Hospital risk-standardized complication rate following implantation of implantable cardioverter-defibrillator (ICD) (Yale University/Centers for Medicare & Medicaid Services [CMS])
- Hospital 30-day risk-standardized readmission rates following percutaneous coronary intervention (PCI) (Yale University/CMS)
- 30-day post-hospital AMI discharge care transition composite measure (Brandeis University/CMS)
- 30-day post-hospital heart failure (HF) discharge care transition composite measure (Brandeis University/CMS)
- Intensive care unit (ICU) length-of-stay (LOS) (Phillip R. Lee Institute for Health Policy Studies, University of California San Francisco). This measure is paired with OT1-024-09 Intensive care: In-hospital mortality rate.
- Intensive care: In-hospital mortality rate (Phillip R. Lee Institute for Health Policy Studies, University of California San Francisco). This measure is paired with OT1-023-09 Intensive care unit (ICU) length-of-stay (LOS).
- Health-related quality of life in COPD patients before and after pulmonary rehabilitation (American Association of Cardiovascular and Pulmonary Rehabilitation [AACVPR])
- Functional capacity in COPD patients before and after pulmonary rehabilitation (AACVPR)

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, FIRST REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT

BACKGROUND

The results or outcomes of an episode of healthcare are inherently important because they reflect the reason consumers seek healthcare (e.g., to improve function, decrease pain, or survive), as well as the result healthcare providers are trying to achieve. Patient outcomes reflect the wide assortment of care processes and coordination of efforts among all caregivers as well as other contributing factors that determine the end result of an episode of care.

Donabedian defined outcomes as "changes (desirable or undesirable) in individuals and populations that are attributed to healthcare."[1] Outcome measures also provide an integrative assessment of quality reflective of multiple care processes across the continuum of care. There are a variety of types of outcome measures. Some represent an end result such as mortality or function; others are considered intermediate outcomes (e.g., physiological or biochemical values such as blood pressure or LDL cholesterol) that precede and may lead to a longer-range end-result outcome. Sometimes proxies are used to indicate an outcome (e.g., hospital readmission indicates deterioration in health status since discharge). To date the National Quality Forum (NQF) has endorsed more than 200 outcome measures in a variety of topic areas (Appendix C). As greater focus is placed on evaluating the outcome of episodes of care, additional measures of patient outcomes are needed to fill gaps in the current portfolio.

STRATEGIC DIRECTIONS FOR NQF

NQF's mission includes three parts: 1) setting national priorities and goals for performance improvement, 2) endorsing national consensus standards for measuring and publicly reporting on performance, and 3) promoting the attainment of national goals through education and outreach programs. As greater numbers of quality measures are developed and brought to NQF for consideration of endorsement, it is incumbent on NQF to assist stakeholders to "measure what makes a difference" and address what is important to achieve the best outcomes for patients and populations. For more information see

www.qualityforum.org/projects/Patient_Outcome_Measures_Phases1-2.aspx.

Several strategic issues have been identified to guide consideration of candidate consensus standards:

- **DRIVE TOWARD HIGH PERFORMANCE.** Over time, the bar of performance expectations should be raised to encourage the achievement of higher levels of system performance.
- **EMPHASIZE COMPOSITES.** Composite measures provide much-needed summary information pertaining to multiple dimensions of performance and are more comprehensible to patients and consumers.
- **MOVE TOWARD OUTCOME MEASUREMENT.** Outcome measures provide information of keen interest to consumers and purchasers, and when coupled with healthcare process measures, they provide useful and actionable information to providers. Outcome measures also focus attention on much-needed system-level improvements, because achieving the best patient outcomes often requires carefully designed care processes, teamwork, and coordinated action on the part of many providers.
- **FOCUS ON DISPARITIES IN ALL THAT WE DO.** Some of the greatest performance gaps relate to care of minority populations. Particular attention should be focused on the most relevant race/ethnicity/language/socioeconomic strata to identify relevant measures for reporting.

NATIONAL PRIORITIES PARTNERSHIP

NQF seeks to endorse measures that address the National Priorities and Goals of the National Priorities Partnership.[2] The National Priorities Partnership represents those who receive, pay for, provide, and evaluate healthcare. The National Priorities and Goals focus on these areas:

- patient and family engagement,
- population health,
- safety,

- care coordination,
- palliative and end-of-life care, and
- overuse.

NQF'S CONSENSUS DEVELOPMENT PROCESS (CDP)

Patient Outcomes Project

NQF's National Voluntary Consensus Standards for Patient Outcomes project[3] seeks to endorse additional outcome measures with an emphasis on high-impact (high-volume, high-morbidity, high-cost) conditions and cross-cutting areas. The Patient Outcomes project is structured in several phases:

- Phases 1 and 2—cross-cutting measures and measures on cardiovascular, pulmonary, and bone/joint conditions as well as chronic kidney disease, diabetes, and several types of cancers; and
- Phase 3—child health and mental health.

Additionally, the project will identify gaps in important outcome measures.

Scope of Patient Outcomes

The Steering Committee defined outcomes quite broadly to encompass a variety of types of patient outcomes within the scope of this project:

- patient function, symptoms, health-related quality of life (physical, mental, social);
- intermediate clinical outcomes (physiologic, biochemical);
- patient experience with care; knowledge, understanding, motivation; health risk status or behavior (including adherence);
- service utilization as a proxy for patient outcome (e.g., change in condition) or potential indicator of efficiency;
- non-mortality clinical morbidity related to disease control and treatment;
- healthcare-acquired adverse event or complication (non-mortality); and

- mortality.

Evaluating Potential Consensus Standards

This first report presents the evaluation of an initial group of 12 measures in the areas of pulmonary/intensive care and cardiovascular conditions. Candidate consensus standards were solicited through a Call for Measures in September 2009 and actively sought through searches of the National Quality Measures Clearinghouse, NQF Member websites, and an environmental scan. NQF staff contacted potential measure stewards to encourage submission of measures for this project.

Twelve measures were evaluated for suitability as voluntary consensus standards for accountability and public reporting in this first phase. The measures were evaluated using NQF's standard evaluation criteria.[4] Either the Pulmonary/ICU Technical Advisory Panel (TAP) or the Cardiovascular TAP rated the sub-criteria for each candidate consensus standard and identified strengths and weaknesses to assist the project Steering Committee (Committee) in making recommendations (see Appendix B for TAP and Committee lists). The 24-member, multistakeholder Committee provided final evaluations of the four main criteria: importance to measure and report; scientific acceptability of the measure properties; usability; and feasibility, as well as the recommendation for endorsement. Measure developers participated in the TAP and Committee discussions to respond to questions and clarify any issues or concerns.

Evaluating Composite Measures

Several composite measures were submitted for consideration in the Patient Outcomes project. NQF has established a framework and criteria for evaluating composite measures.[5] An important evaluation principle outlined in the framework states that components of the composite (i.e., individual measures or component composite measures) must be either NQF-endorsed measures or determined to meet the individual measure evaluation criteria as the first step in evaluating the composite measure. A component measure might not be deemed to be appropriate for public reporting in its own right as an individual measure, but could be determined to be an important

component of a composite. Another important principle states that the methods for constructing a composite should be explicitly stated and transparent so that the composite can be deconstructed.

RECOMMENDATIONS FOR ENDORSEMENT

This report presents the results of the evaluation of 12 measures considered under NQF's CDP. Eight measures are recommended for endorsement as voluntary consensus standards suitable for public reporting and quality improvement.

Candidate Consensus Standards Recommended for Endorsement

OT1-007-09: Hospital risk-standardized complication rate following implantation of implantable cardioverter-defibrillator (ICD) (Yale University/CMS) *This measure provides hospital-specific risk-standardized rates of procedural complications following the implantation of an ICD in ~~Medicare Fee for Service (FFS~~) patients at least 65 years of age. The measure uses clinical data available in the National Cardiovascular Data Registry (NCDR) ICD Registry for risk-adjustment that has been linked with CMS administrative claims data used to identify procedural complications. This measure can be applied to all Medicare patients at least 65 years of age.*

This measure was designed to combine clinical data from the National Cardiovascular Data Registry (NCDR)[6] ICD Registry and administrative data. All patients over age 65 years are required to be entered into the registry, and 70 percent of hospitals report all patients to NCDR. The Committee and TAP agreed that the measure is important in addressing a costly procedure that has a high complication rate (18 percent). The TAP also commended the strong performance characteristics of the risk model. Committee members were interested in including patients below age 65 years. The measure developers advised the Committee that the measure was developed in the Medicare 65 and older fee-for-service population because this is the only cohort of patients for whom the data are available to reliably identify outcomes (complications and vital status) beyond the index hospitalization. The measure could be applied to a broader population

of patients undergoing ICD implantation if the required data elements were available with some additional work to optimize the risk-adjustment methodology.

A Committee member noted that the variation of values in the technical report is very narrow due to hierarchical modeling and therefore will not discriminate among providers. Others suggested that clustering of the complication rate at 18 percent represents opportunity for improvement overall. This measure addresses the National Priority of safety.

OT1-008-09: Hospital 30-day risk-standardized readmission rates following percutaneous coronary intervention (PCI) (Yale University/CMS) *This measure estimates hospital risk-standardized 30-day readmission rates following PCI in ~~Medicare Fee for Service (FFS~~) patients at least 65 years of age. As PCI patients may be readmitted electively for staged revascularization procedures, we will exclude such elective readmissions from the measure. The measure uses clinical data available in the National Cardiovascular Disease Registry (NCDR) CathPCI Registry for risk-adjustment that has been linked with the CMS administrative claims data used to identify readmissions. This measure can be applied to all Medicare patients at least 65 years of age.*

The measure developers advised the Committee and TAP that this measure was developed using the same approach as the NQF-endorsed® readmission measure for AMI. Twenty-nine percent of patients undergoing PCI have also had an MI and will be captured in both measures. The major discussion centered on the all-cause readmissions and the 30-day timeframe. Some Committee and TAP members suggested that a 15-day timeframe would be more directly related to the antecedent PCI procedure. The measure developers presented their hazard of readmission analysis over 90 days that found that risk of readmission was greatest in the first 15 days but remained elevated up to 60 days following discharge (with a plateau between 30 to 45 days). The developers asserted that a shorter timeframe would have a stronger association with the initial care of the patients but would miss the substantial number of readmissions between 15 to 30 days that are likely attributable to the care delivered within the index hospitalization and during the transition from that setting.

Committee and TAP members noted that the risk model performance characteristics are not as strong as for some measures, such as ICU mortality, but are comparable to other readmission measures endorsed by NQF. Again, the Committee recommended broadening the population and not specifying the measure by type of insurance. The measure developers replied that the measure can be applied to a broader population if the data are available, and inclusion of other populations will require re-estimation of the model covariates.

The Committee noted a philosophical difference among stakeholders. Many supported a patient-centered, episode of care perspective in which a procedure is a part of the overall care for a chronic condition. Dissenting comments advocated for a focus on the immediate and related aspects of the procedure only. The Committee strongly supported the patient-centered approach.

This measure addresses the National Priority of overuse.

OT1-016-09: 30-day post-hospital AMI discharge care transition composite measure (Brandeis University/CMS) *This measure scores a hospital on the incidence among its patients during the month following discharge from an inpatient stay having a primary diagnosis of AMI for three types of events: readmissions, ED visits, and evaluation and management (E&M) services.*

Component measures:

- *0505: 30-day all-cause risk standardized readmission rate following acute myocardial infarction (AMI) hospitalization*
- *OT1-002-09: 30-day post-hospital AMI discharge ED visit rate*
- *OT1-003-09: 30-day post-hospital AMI discharge evaluation and management service*

OT1-017-09: 30-day post-hospital heart failure (HF) discharge care transition composite measure (Brandeis University/CMS) *This measure scores a hospital on the incidence among its patients during the month following discharge from an inpatient stay having a primary diagnosis of heart failure for three types of events: readmissions, ED visits, and evaluation and management (E&M) services.*

Component measures:

- *0330: 30-day all-cause risk standardized readmission rate following heart failure hospitalization*
- *OT1-006-09: 30-day post-hospital HF discharge ED visit rate*
- *OT1-004-09: 30-day post-hospital HF discharge evaluation and management service*

These two composite measures were developed using the same methodology. The composite measures bring together NQF-endorsed readmission measures for AMI (0505) and heart failure (0330) and new measures for ED visits and evaluation and management (E&M) services within 30 days of discharge for AMI or HF. The risk models for the new measures use the same methodology as the endorsed readmission measures. The development team assigned weights of (-4) for readmissions, (-2) for ED visits, and (+1) for E&M services to arrive at the composite score. The measure developers suggested that these weightings represent the values of a desirable post-discharge care trajectory in which readmissions are least desirable, ED visits are not desirable but are less so than a readmission, and follow-up outpatient care is desirable. The Committee agreed that although the weightings are arbitrary, they seem reasonable and can be re-evaluated once the measures are in widespread use.

The measure developers presented an analysis of the spread of sample composite scores for individual hospitals from high to low and the relative contributions of the three component measures. Some Committee members found the mix of positive and negative weightings arbitrary and confusing; others thought a composite of readmission and ED visits would be more meaningful for care transitions. A majority of Committee members found the composite measures addressed care transitions and the outcomes of hospitalization. These hospital-level measures address the National Priority of care coordination.

OT1-023-09: Intensive care unit (ICU) length-of-stay (LOS) (Phillip R. Lee Institute for Health Policy Studies, University of California San Francisco) This measure is paired[7] with OT1-024-09: Intensive care: In-hospital mortality rate. *For all patients admitted to the ICU, total duration of time spent in ICU until time of discharge; both observed and risk-adjusted LOS*

reported with the predicted LOS measured using an adjustment model based on the (Mortality Probability Model) MPM III.

The Committee and TAP agreed that length of stay is an important outcome, particularly in terms of resource use and efficiency; however, all agreed that the ICU LOS measure must be paired with the ICU mortality measure to balance potential unintended consequences of inappropriate reductions in LOS. The LOS measure uses the same risk-adjustment model and data collection as the ICU mortality measure. Committee and TAP members noted some issues around identifying the start of an ICU stay, particularly with patients remaining in the emergency department for long periods of time before admission to the ICU. Again, the Committee noted there are cultural influences that affect the length of stay, so some means to address disparities is strongly recommended. This measure addresses the National Priority of overuse.

OT1-024-09: Intensive care: In-hospital mortality rate (Phillip R. Lee Institute for Health Policy Studies, University of California San Francisco) This measure is paired with OT1-023-09: Intensive care unit (ICU) length-of-stay (LOS). *For all adult patients admitted to the ICU, the percentage of patients whose outcome is death; both observed and risk-adjusted mortality rates are reported using predicted rates based on the (Mortality Probability Model) MPM III.*

Both Committee and Pulmonary/ICU TAP members agreed that this measure is an important outcome, with documented variation in outcomes. The TAP rated this measure highly for its technical characteristics. The risk model[8] has been published and refined over several years. It is parsimonious compared to other models such as APACHE or SAPA III and demonstrates strong performance characteristics. Committee members were extremely interested in how disparities might be handled. Race, ethnicity, and socioeconomic status (SES) are not included in the risk model, which is consistent with NQF's evaluation criteria. The measure developer noted that data for race, ethnicity, and SES are generally not available. Committee members suggested insurance type or zip code might be proxies. The Committee strongly encouraged the measure developer to consider how to address disparities for future implementation. This measure is voluntarily reported by 246 hospitals in California on www.CalHospitalCompare. Data

collection is compatible with electronic health records (EHRs; some vendors have already built in the data elements), and an electronic submission tool is available.

Candidate Consensus Standards Recommended for Time-Limited Endorsement[9]

OT1-019-09: Health-related quality of life in COPD patients before and after pulmonary rehabilitation (AACVPR) *The percentage of patients with COPD enrolled in pulmonary rehabilitation (PR) who are found to increase their health-related quality of life score (HRQOL).*

Committee and TAP members noted that a new Medicare benefit for pulmonary rehabilitation effective January 2010 will increase the number of PR providers as well as referrals to PR. Committee members noted that there are few endorsed measures of quality of life—a significant gap in NQF's portfolio. This measure does not address appropriate referrals for PR and captures only patients who complete PR. TAP members suggested that lack of completing the PR program may indicate a quality problem. The Chronic Respiratory Disease Questionnaire (CRQ) specified in the measure is well tested and validated and widely used in PR programs. However, some alternative tools are equally validated and used widely, such as the St. George's Respiratory Questionnaire (SGRQ).

There were some concerns with the selection of the age inclusion. The Pulmonary TAP specifically questioned why age 20 years and older was chosen, because COPD generally presents later in life, and younger patients usually have asthma and not COPD. The measure developer responded that the lower age will capture patients with alpha-1 antitrypsin deficiency; however, in the interest of harmonization[10] the measure developer is willing to use ages 40 years and older.

Although the CRQ tool has been well tested and validated at the individual patient level, this measure, as specified, has not been tested for reliability and validity as a performance measure and is therefore recommended for time-limited endorsement. The HRQOL survey is performed as part of care, and while typically hand-scored at the current time, there is no reason it cannot be embedded in an EHR. AACVPR also anticipates establishing a registry to collect data. This measure addresses the National Priority of patient and family engagement.

OT1-020-09: Functional capacity in COPD patients before and after pulmonary rehabilitation (AACVPR) *The percentage of patients who are enrolled in pulmonary rehabilitation (PR) who are found to increase their functional capacity by at least ~~54~~25 meters (~~176~~82 feet), as measured by a standardized 6-minute walk test (6MWT).*

The 6MWT is a widely used and well-validated assessment of functional status of individual patients. TAP members were initially concerned with the original submission that specified a 54-meter threshold that seemed quite high. A new publication in February 2010[11] indicated that a threshold of 25 meters is more reasonable, and the measure was aligned with the newest data. The issues regarding appropriate referral, completion of PR programs, age inclusion, and testing are the same as for the HRQOL measure.

Candidate Consensus Standards Not Recommended for Endorsement

The following measures are included in the AMI and Heart Failure Care Transitions Composite measures recommended for endorsement. Although the Committee recommended them as part of the composite measure, a narrow majority of Committee members did not recommend these as stand-alone measures.

OT1-002-09: 30-day post-hospital AMI discharge ED visit rate (Brandeis University/CMS) *This measure estimates the percentage of Medicare beneficiaries (age 65 years and older) discharged from the hospital with a diagnosis of AMI and evidence of an emergency department (ED) visit within 30 days of discharge and prior to a readmission.*

OT1-006-09: 30-day post-hospital HF discharge ED visit rate (Brandeis University/CMS) *This measure estimates the percentage of Medicare beneficiaries (age 65 years and older) discharged from the hospital with a diagnosis of heart failure (HF) and evidence of an emergency department (ED) visit within 30 days of discharge and prior to a readmission.*

Committee and TAP members were concerned with "all-cause" ED visits, particularly ED visits for issues unrelated to the recent hospitalization. Committee members noted wide variation in

local use of EDs, particularly in areas with limited primary care services or where sending patients to the ED after hours is common practice. Committee members noted that the risk model performance is not robust, and the measure developers replied that these risk models perform similarly to the endorsed readmission measures that use the same methodology.

OT1-003-09: 30-day post-hospital AMI discharge evaluation and management service (Brandeis University/CMS) *This measure estimates the percentage of Medicare beneficiaries age 65 years and older discharged from the hospital with the diagnosis of AMI receiving an evaluation and management service within 30 days of the hospital discharge and prior to a hospital readmission or ED visit.*

OT1-004-09: 30-day post-hospital HF discharge evaluation and management service (Brandeis University/CMS) *This measure estimates the percentage of Medicare beneficiaries age 65 years and older discharged from the hospital with the diagnosis of heart failure receiving an evaluation and management service within 30 days of the hospital discharge and prior to a hospital readmission or ED visit.*

Committee members agreed that post-discharge follow-up is important but that a specific E&M may not be the only effective mechanism to achieve care coordination. Committee members cited ongoing approaches to reduce readmissions in their own institutions that include nurse visits, as demonstrated in the research of Dr. Mary Naylor[12,13] or other innovative approaches. Committee members reported that some regional CMS carriers do not accept billing for certain types of nurse visits, so innovative approaches to reduce readmissions may be stifled by crediting only E&M services.

ADDITIONAL RECOMMENDATIONS

1. **Apply measures to the broadest populations possible.**

The Committee strongly recommends that measure developers consider the broadest application of measures and not include restrictive specifications, such as payer or coverage type, or age limitations, unless appropriate for the condition.

2. More attention to disparities is needed.

The Committee strongly recommends that measure developers address measurement of disparities in measure specifications. According to NQF measure evaluation criteria, factors such as race, ethnicity, and socioeconomic status should not be included in risk models; however, the data should be collected to allow for stratification. Some providers serve patient populations that are extremely vulnerable to disparities, and the stratified results would not be small numbers.

3. Provide rationale for use of risk model methodology~~hierarchical modeling~~.

Committee members recommend that measure developers provide the rationale for selecting the risk model methodology~~.using hierarchical modeling~~ and describe the impact on discrimination and usability of the results for public reporting and quality improvement. Committee members recommend that NQF establish more guidance and criteria for evaluating risk models, particularly those that seem to minimize variation and reduce differentiation among providers.

NOTES

1. Donabedian A, The quality of care. How can it be assessed? *JAMA*, 1988;260(12):1743-1748.
2. National Quality Forum (NQF), *National Priorities Partnership*, Washington, DC: NQF. Available at www.nationalprioritiespartnership.org. Last accessed April 2010.
3. NQF, *Patient Outcomes Measures: Phases I and II webpage*. Available at www.qualityforum.org/projects/Patient_Outcome_Measures_Phases1-2.aspx. Last accessed April 2010.
4. NQF, *Measure Evaluation Criteria*, Washington, DC: NQF; 2008. Available at www.qualityforum.org/docs/measure_evaluation_criteria.aspx. Last accessed April 2010.
5. NQF, *Composite Measure Evaluation Framework and National Voluntary Consensus Standards for Mortality and Safety—Composite Measures*, Washington, DC: NQF, 2009. Available at www.qualityforum.org/Publications/2009/08/Composite_Measure_Evaluation_Framework_and_National_Voluntary_Consensus_Standards_for_Mortality_and_Safety—Composite_Measures.aspx. Last accessed June 2010.

~~4.~~6. National Cardiovascular Data Registry (NCDR), Washington, DC: NCDR. Available at www.ncdr.com. Last accessed April 2010.

~~5.~~7. Paired measures are individual measures that theoretically could have been approved singly, but are recommended for NQF endorsement only if both are approved and used together.

~~6.~~8. Higgins TL, Teres D, Copes WS, et al., Assessing contemporary intensive care unit outcome: an updated Mortality Probability Admission Model (MPM0-III), *Crit Care Med*, 2007;35:827-835.

~~7.~~9. Information regarding NQF's time-limited endorsement policy and the 2010 addendum is available at http://www.qualityforum.org/Measuring_Performance/Consensus_Development_Process%e2%80%99s_Principle/Consensus_Standards_Approval_Committee_Decision.aspx

~~8.~~10. Harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., influenza immunization of patients in hospitals, nursing homes, etc.), related measures for the same target population (e.g., eye exam and HbA1c for patients with diabetes), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the various measures and the evidence for the specific measure focus, as well as differences in data sources.

~~9.~~11. Holland AE, Hill CJ, Rasekaba T, et al., Updating the minimal important difference for six-minute walk distance in patients with chronic obstructive pulmonary disease, *Arch Phys Med Rehabil*, 2010;91(2):221-225.

~~10.~~12. Naylor MD, Transitional care for older adults: a cost-effective model, *LDI Issue Brief*, 2004;9(6):1-4.

~~11.~~13. Naylor MD, Feldman PH, Keating S, et al., Translating research into practice: transitional care for older adults, *J Eval Clin Pract*, 2009;15(6):1164-1170.

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, FIRST REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT

APPENDIX A: MEASURE SPECIFICATIONS

The following table presents the detailed specifications for each of the proposed National Voluntary Consensus Standards for Patient Outcomes. All information presented has been derived directly from measures sources/developers without modification or alteration (except where measure developers agreed to such modifications during the NQF Consensus Development Process) and is current as of April 13, 2010. All proposed voluntary consensus standards are open source, meaning they are fully accessible and disclosed. Measures were developed by the Phillip R. Lee Institute for Health Policy Studies at the University of California at San Francisco; Yale University; Brandeis University; the Centers for Medicare & Medicaid Services (CMS); and the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR).

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
OT1-007-09	Hospital risk-standardized complication rate following implantation of implantable cardioverter-defibrillator (ICD)	Yale University/Centers for Medicare & Medicaid Services (CMS)	This measure provides hospital-specific risk-standardized rates of procedural complications following the implantation of an ICD in ~~Medicare Fee-For-Service (FFS)~~ patients at least 65 years of age. The measure uses clinical data available in the National Cardiovascular Data Registry (NCDR) ICD Registry for risk--adjustment that has been linked with CMS administrative	This outcome measure does not have a traditional numerator and denominator like a core process measure (e.g., percentage of adult patients with diabetes aged 18-75 years receiving one or more hemoglobin A1c tests per year); thus, we are using this field to define the outcome (ie adverse events) following ICD implantation. The measured outcome for each index admission is one or more complications or mortality within 30 or 90 days (depending on the complication)	The target population for this measure includes inpatient or outpatient ICD implants for ~~Medicare fee-for-service (FFS)~~ beneficiaries at least 65 years of age at the time of implantation who have matching information in the National Cardiovascular Disease Registry (NCDR) ICD Registry. The patient cohort is defined by ICD-9 procedures codes from inpatient claims and Healthcare Common Procedure Coding System/Current Procedural	We are using this field to define exclusions to the patient cohort: (1) Non Medicare fee-for-service patients on the first day of the patient stay. Rationale: Outcome data are being derived only for Medicare fee-for-service patients. (2) Not the first claim in the same claim bundle. When several claims in the same hospital representing the same patient stay exist in the data together (bundled), any claim other than the first in such a bundle is	Electronic adminstrative data/claims, Survey: Patient	Population: national, Facility/Agency

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			claims data used to identify procedural complications. This measure can be applied to all Medicare patients at least 65 years of age.	following ICD implantation. Complications are counted in the measure only if they occur during a hospital admission. Complications are identified using International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) diagnosis and procedure codes as well as the Medicare Enrollment Database (vital status) as indicated below: Complications measured for 30 days: (1) Pneumothorax	Terminology (HCPCS/CPT) procedure codes from outpatient claims as outlined in the denominator details. **Denominator Details:** ICD-9 and CPT codes used to define the target population are listed below: ICD-9 codes: 00.50 Implantation of cardiac resynchronization pacemaker without mention of defibrillation, total system (crt-p)	excluded. Rationale: Inclusion of these patients could result in duplicate counting in the measure. (3) Patient stays which lack 90-days of Medicare fee-for-service enrollment post discharge. Patients who cannot be tracked for 90 days following discharge are excluded. Rationale: There will not be adequate follow-up data to assess complications. (4) Previous ICD placement. Patient stays in which the patient had an ICD implanted		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				or hemothorax plus a chest tube Definition: (a) Pneumothorax / hemothorax: 512.1 or 511.8 (diagnosis code) (b) Chest tube: 34.04, 34.05, 34.06, or 34.09 (procedure code) (2) Hematoma plus a blood transfusion or evacuation Definition: (a) Hematoma: 998.1 (diagnosis code) (b) Blood transfusion: 518.7, 287.4, V59.01, V58.2 (diagnosis code), or 99.00, 99.03, 99.04 (procedure code); Evacuation: 34.04, 34.09 (procedure code)	00.51 Implantation of cardiac resynchronization defibrillator, total system (crt-d) 00.52 Implantation or replacement of transvenous lead [electrode] into left ventricular coronary venous system 00.53 Implantation or replacement of cardiac resynchronization pacemaker pulse generator only (crt-p) 00.54 Implantation or replacement of cardiac	prior to the index hospital stay are excluded. Rationale: Ideally, the measure would include patients with a prior ICD, as this is a population known to be at high risk of adverse outcomes. However, for these patients it is difficult to distinguish in the administrative data whether adverse events such as infection were complications of the second ICD placement or were present on admission. The indications for reimplantation include events		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				(3) Cardiac tamponade or pericardiocentesis Definition: (a) Cardiac tamponade: 420, 423.0, 423.3, 423.9 (diagnosis code), or 37.0, 37.12 (procedure code) (4) Death Source: Medicare enrollment database Complications measured for 90 days (5) Mechanical complications requiring a system revision Definition: (a) Mechanical complications with system revision: 996.0 (diagnosis code) (b) System	resynchronization defibrillator pulse generator device only (crt-d) 37.94 Implantation or replacement of automatic cardioverter/defibrillator, total system (aicd) CPT codes: 33216 Insertion, single chamber transvenous electrode ICD 33217 Insertion, dual chamber transvenous electrode ICD 33218 Repair, single chamber	included in our definition of procedural complications such as device infection, device malfunction, or lead dislodgement. Given current coding practices, we are unable to determine whether a 'complication' code is present on admission or in fact represents a procedural complication. In order to avoid misclassification, we exclude these patients from the measure. See above. We are deriving the corresponding		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				revision: 37.75, 37.79, 37.97, 37.99, or 00.52 (procedure code) (6) Device related infection Definition: (a) Infection: 996.61 (diagnosis code) (7) Additional ICD implantation Definition: (a) Inpatient or outpatient ICD implantation: 00.50, 00.51, 00.52, 00.53, 00.54, or 37.94 (procedure codes) (b) Outpatient ICD implantation: 33216, 33217, 33218, 33220,33223, 33240, 33241, or 33249 (CPT codes)	transvenous electrode ICD 33220 Repair, dual chamber transvenous electrode ICD 33223 Pocket revision ICD 33240 Insertion of single or dual chamber ICD pulse generator 33241 Removal of single or dual chamber ICD pulse generator 33249 Insertion or repositioning of electrode lead(s)	codes based on the data for exclusion. Adjustments: Risk-adjustment devised specifically for this measure/condition We developed a risk adjustment model for the measure and calculated hospital 30-day risk-standardized complication rates (RSCRs) using hierarchical regression. Because of the natural clustering of the observations within hospitals, we estimated hierarchical generalized linear		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					for single or dual chamber pacing ICD and insertion of pulse generator ~~Complications are identified using International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) diagnosis and procedure codes as well as the Medicare Enrollment Database (vital status) as indicated below: Complications measured for 30 days: (1) Pneumothorax or hemothorax plus a chest tube Definition: (a)~~	models (HGLMs). These models extend generalized linear models (GLMs) to include additional random terms in the linear predictor. As described in the "Calculation Algorithm," we perform risk adjustment to account for differences in patient severity present before the implantation of the ICD using a hierarchical logistic regression model to calculate RSCRs. The risk adjustment variables are abstracted from the NCDR ICD Registry data.		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					~~Pneumothorax / hemothorax: 512.1 or 511.8 (diagnosis code) (b) Chest tube: 34.04, 34.05, 34.06, or 34.09 (procedure code) (2) Hematoma plus a blood transfusion or evacuation Definition: (a) Hematoma: 998.1 (diagnosis code) (b) Blood transfusion: 518.7, 287.4, V59.01, V58.2 (diagnosis code), or 99.00, 99.03, 99.04 (procedure code); Evacuation: 34.04, 34.09 (procedure code) (3) Cardiac tamponade or pericardiocentesis~~	We used logistic regression with stepwise selection (entry $p<0.15$; retention with $p<0.05$) for variable selection. We also assessed the direction and magnitude of the regression coefficients. This resulted in a final risk-adjusted complications model that included 13 variables. The final risk adjustment variables include: Demographic (1) Age (10 year increments) (2) Female Admission (3) Hospital Reason Admitted for this		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					~~Definition: (a) Cardiac tamponade: 420, 423.0, 423.3, 423.9 (diagnosis code), or 37.0, 37.12 (procedure code)~~ ~~(4) Death Source: Medicare enrollment database~~ ~~Complications measured for 90 days~~ ~~(5) Mechanical complications requiring a system revision~~ ~~Definition: (a) Mechanical complications with system revision: 996.0 (diagnosis code)~~ ~~(b) System revision: 37.75, 37.79, 37.97, 37.99, or~~	procedure Hospitalized: Cardiac Hospitalized: Non-Cardiac History and Risk Factors (4) New York Heart Association (NYHA) Class: Current Status NYHA I NYHA II NYHA III NYHA IV (5) Previous Coronary Artery Bypass Graft (CABG) (6) Chronic Lung Disease (7) Hypertension (8) Renal Failure- Dialysis Diagnostics (9) Atrioventricular Conduction (AVC)		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					~~00.52(procedure code)~~ ~~(6) Device related infection~~ ~~Definition: (a) Infection: 996.61 (diagnosis code)~~ ~~(7) Additional ICD implantation~~ ~~Definition: (a) Inpatient or outpatient ICD implantation: 00.50, 00.51, 00.52, 00.53, 00.54, or 37.94 (procedure codes)~~ ~~(b) Outpatient ICD implantation: 33216, 33217, 33218, 33220,33223, 33240, 33241, or 33249 (CPT codes)~~	AVC: Normal AVC: Abnormal- First Degree Heart Block Only AVC: Abnormal- 2nd/3rd Degree Heart Block AVC: Paced (any) (10) BUN > 30 mg/dl (11) Sodium <135 mg/dl 135 to 145 mg/dl >145 mg/dl (12) Systolic Blood Pressure < 100mmHG (13) ICD Type Single Chamber Dual Chamber Biventricular		
OT1-008-09	Hospital 30-day risk-standardized	Yale University/Centers for	This measure estimates hospital risk-	This outcome measure does not have a traditional	The target population for this measure includes	Note: We are using this field to define exclusions	Electronic adminstrative data/claims,	Population: national, Facility/A

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
	readmission rates following percutaneous coronary intervention (PCI)	Medicare & Medicaid Services (CMS)	standardized 30-day readmission rates following PCI in ~~Medicare Fee for Service (FFS)~~ patients at least 65 years of age. As PCI patients may be readmitted electively for staged revascularization procedures, we will exclude such elective readmissions from the measure. The measure uses clinical data available in the National Cardiovascular Disease Registry (NCDR) CathPCI Registry for	numerator and denominator like a core process measure (e.g., percentage of adult patients with diabetes aged 18-75 years receiving one or more hemoglobin A1c tests per year); thus, we are using this field to define readmissions. The outcome for this measure is 30-day all-cause readmission. We define a readmission as a subsequent hospital inpatient admission within 30 days of either the discharge date of an admission with PCI (for admitted patients) or the outpatient	inpatient or outpatient PCI procedures for ~~Medicare FFS~~ beneficiaries at least 65 years of age at the time of the procedure who have matching information in the National Cardiovascular Disease Registry (NCDR) CathPCI Registry. The patient cohort is defined by International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) procedure codes for both inpatient and outpatient claims and	to the patient cohort. (1) PCIs for patients who are not Medicare FFS beneficiaries on admission Rationale: Patients not enrolled in Medicare FFS at the start of the episode of care are excluded as readmission information is currently available only for FFS patients. (2) Patient stays that are not the first claim in the same claim bundle Rationale: Multiple claims from an individual hospital can be	Survey: Patient	gency

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			risk-adjustment that has been linked with the CMS administrative claims data used to identify readmissions. This measure can be applied to all Medicare patients at least 65 years of age.	PCI claim end date (for patients whose PCI was performed as an outpatient service). In the CathPCI Registry, admissions are identified with field 614 (PCI=Yes). We do not count readmissions associated with a 'staged' revascularization procedure. Staged readmissions are not counted in this measure as readmissions (some patients have planned readmissions for revascularization procedures – for example, to	Current Procedural Terminology (CPT) procedure codes for outpatient claims. ~~In the CathPCI Registry, admissions are identified with field 614 (PCI=Yes). We do not count readmissions associated with a 'staged' revascularization procedure. Staged readmissions are not counted in this measure as readmissions (some patients have planned readmissions for revascularization procedures – for example, to~~	bundled together. In order to ensure that the selected PCI is the index PCI, those PCI procedures that were not the first claim in a specific bundle are excluded. (3) The PCI is not performed within 10 days of admission Rationale: Patients who have a PCI after many days of hospitalization are rare and represent a distinct population that likely has risk factors for readmission related to the hospitalization that are not well quantified in the		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				perform PCI on a second vessel or a second location in the same vessel, or to perform coronary artery bypass graft (CABG) surgery after AMI and a period of recovery outside the hospital). Because admissions for PCI and CABG may be staged or scheduled readmissions, we do not count as readmissions those admissions after discharge that include PCI or CABG procedures unless the principal discharge diagnosis for the readmission is one of the	~~perform PCI on a second vessel or a second location in the same vessel, or to perform coronary artery bypass graft (CABG) surgery after AMI and a period of recovery outside the hospital). Because admissions for PCI and CABG may be staged or scheduled readmissions, we do not count as readmissions those admissions after discharge that include PCI or CABG procedures unless the principal discharge diagnosis for the readmission is one of the~~	registry. It seems clinically sensible to exclude these patients. (4) The patient is transferred out Rationale: Patient stays in which the patient received a PCI and was then transferred to another hospital are excluded as the hospital that performed the PCI procedure does not provide discharge care and cannot be fairly held responsible for their outcomes following discharge. (5) The patient dies during hospitalization Rationale: Subsequent		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				following diagnoses (which are not consistent with a scheduled readmission): heart failure (HF), acute myocardial infarction (AMI), unstable angina, arrhythmia, and cardiac arrest (i.e., readmissions with these diagnoses and a PCI or CABG procedure are counted as readmissions.	~~following diagnoses (which are not consistent with a scheduled readmission): heart failure (HF), acute myocardial infarction (AMI), unstable angina, arrhythmia, and cardiac arrest (i.e., readmissions with these diagnoses and a PCI or CABG procedure are counted as readmissions.~~ **Denominator Details:** ICD-9 and CPT codes used to define the target population are listed below: ICD-9 codes:	admissions (readmissions) are not possible. (6) The patient leaves against medical advice (AMA) Rationale: Hospitals and physicians do not have the opportunity to provide highest quality care. (7) The patient lacks a full ~~month~~30-days of follow-up in the Medicare program Rationale: Patient stays that cannot be tracked for the full 30-day follow-up period do not provide adequate information to determine		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					00.66 Percutaneous transluminal coronary angioplasty or coronary atherectomy 36.01 Single vessel PTCA or coronary atherectomy 36.02 Percutaneous transluminal coronary angioplasty or coronary atherectomy with mention of thrombolytic agent 36.05 Multiple vessel PTCA or coronary atherectomy	readmissions. (8) A subsequent admission with PCI within 30-days of an index admission Rationale: A subsequent readmission for PCI within 30 days of the index PCI cannot be considered an index hospital stay; it is a readmission. See above. We are deriving the corresponding codes based on the data for exclusion. Adjustments: Risk-adjustment devised specifically for this		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					36.06 Insertion of non-drug-eluting coronary artery stent(s) 36.07 Insertion of drug-eluting coronary artery stent (s) CPT codes: 92973 Percutaneous transluminal coronary thrombectomy 92980 Coronary Stents (single vessel) 92981 Coronary Stents (each additional vessel) 92982 Coronary Balloon	measure/condition We developed a risk adjustment model for the measure and calculate hospital 30-day risk-standardized readmission rates (RSRRs) using hierarchical logistic regression. Because of the natural clustering of the observations within hospitals, we estimated hierarchical generalized linear models (HGLMs). These models extend generalized linear models (GLMs) to include random effect on the intercept in the		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					Angioplasty (single vessel) 92984 Coronary Balloon Angioplasty (each additional vessel) 92995 Percutaneous Atherectomy 92996 Percutaneous Atherectomy	models. As described in the "Calculation Algorithm," we perform risk adjustment to account for differences in patient severity present before the performance of the PCI using a hierarchical logistic regression model to calculate RSRRs. The risk adjustment variables are abstracted from the CathPCI Registry data. We used logistic regression with stepwise selection (entry $p<0.05$; retention with $p<0.01$) for variable selection. We also assessed		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						the direction and magnitude of the regression coefficients. This resulted in a final risk-adjusted readmission model that included 20 variables. The final risk adjustment variables include: Demographic (1) Age (10 year increments) (2) Female History and Risk Factors (3) Body Mass Index (4) Heart failure-previous history (5) Previous valvular surgery (6) Cerebrovascular Disease (7) Peripheral		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						Vascular Disease (8) Chronic Lung Disease (9) Diabetes None Non-Insulin Diabetes Insulin Diabetes (10) Glomerular Filtration Rate (GFR) Not Measured GFR<30 30<=GFR<60 60<=GFR<90 GFR<=90 (11) Renal Failure – dialysis (12) Hypertension (13) History of tobacco use (14) Previous PCI Cardiac Status (15) Heart failure – current status (16) Symptoms present on		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						admission No MI MI within 24 hours MI after 24 hours Cath Lab Visit (17) Ejection Fraction (EF) Percentage Not Measured EF<30 30<=EF<45 EF<=45 PCI Procedure (18) PCI status Elective Urgent Emergency Salvage (19) Highest Risk Lesion – location pRCA/mLAD/pCIRC pLAD Left main Other (20) Highest pre-		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						procedure TIMI flow: none		
OT1-016-09	30-day post-hospital acute myocardial infarction (AMI) discharge care transition composite measure	Brandeis University/CMS	This measure scores a hospital on the incidence among its patients during the month following discharge from an inpatient stay having a primary diagnosis of heart failure for three types of events: readmissions, ED visits and evaluation and management (E&M) services. These events are relatively common, measurable using readily	The numerator is the weighted sum of the three deviations from their expected values for the individual measures comprising the component measure. The question of appropriate weights on the deviations is difficult and would probably lead to a wide variation in opinion. The weights of -4, -2, and 1 are selected to represent order of magnitude differences in seriousness of the three outcomes,	The composite measure is the weighted sum of three individual measures. Thus, the denominator is one.	N/A	Electronic administrative data/claims	National

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			available administrative data, and associated with effective coordination of care after discharge. The input for this score is the result of measures for each of these three events that are being submitted concurrently under the Patient Outcomes Measures Phase I project's call for measures (ED and E&M) or is already approved by NQF (readmissions). Each of these	which most would agree to (that is to say: readmission is more important than ED which is more important in a negative way than E & M service is in a positive way). The idea of not using weights was also considered, but this was noted to be itself a de facto weight scheme (with all weights the same), and as such, a weight scheme that was less appropriate than the one chosen.				

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			individual measures is a risk-adjusted, standardized rate together with a percentile ranking. This composite measure is a weighted average of the deviations of the three risk-adjusted, standardized rates from the population mean for the measure across all patients in all hospitals. Again, the composite measure is accompanied by a percentile ranking to help with its					

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			interpretation.					
OT1-017-09	30-day post-hospital heart failure (HF) discharge care transition composite measure	Brandeis University/ CMS	This measure scores a hospital on the incidence among its patients during the month following discharge from an inpatient stay having a primary diagnosis of heart failure for three types of events: readmissions, ED visits and evaluation and management (E&M) services. These events are relatively common, measurable using readily available	The numerator is the weighted sum of the three deviations from their expected values for the individual measures comprising the component measure. The question of appropriate weights on the deviations is difficult and would probably lead to a wide variation in opinion. The weights of -4, -2, and 1 are selected to represent order of magnitude differences in seriousness of the three outcomes, which most would	The composite measure is the weighted sum of three individual measures. Thus, the denominator is one.	N/A	Electronic administrative data/claims	National

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			administrative data, and associated with effective coordination of care after discharge. The input for this score is the result of measures for each of these three events that are being submitted concurrently under the Patient Outcomes Measures Phase I project's call for measures (ED and E&M) or is already approved by NQF (readmissions). Each of these individual	agree to (that is to say: readmission is more important than ED which is more important in a negative way than E & M service is in a positive way). The idea of not using weights was also considered, but this was noted to be itself a de facto weight scheme (with all weights the same), and as such, a weight scheme that was less appropriate than the one chosen.				

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			measures is a risk-adjusted, standardized rate together with a percentile ranking. This composite measure is a weighted average of the deviations of the three risk-adjusted, standardized rates from the population mean for the measure across all patients in all hospitals. Again, the composite measure is accompanied by a percentile ranking to help with its interpretation.					

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
OT1-019-09	Health-related quality of life in COPD patients before and after pulmonary rehabilita-tion	AACVPR	The percentage of patients with COPD enrolled in pulmonary rehabilitation (PR) who are found to increase their health-related quality of life score (HRQOL).	Number of patients with clinician diagnosed COPD who have participated in PR and have been found to increase their HRQOL score by 1.0 points, as measured by the Chronic Respiratory Disease Questionnare (CRQ), or a similar tool, at the beginning and the end of PR. To perform the HRQOL assessment, a CRQ is administered by PR staff to each COPD patient enrolled in PR, in	All patients with COPD, during the reporting period, who are enrolled in a PR program. To perform the HRQOL assessment, a CRQ is administered by PR staff to each COPD patient enrolled in PR, in a private interview space. The numerator is calculated as follows: A patient is counted as having increased his/her HRQOL score (measured by CRQ) if the HRQOL score at PR program completion is at least 1.0 points	Inability to read and/or write in order to complete the self-administered CRQ, or presence of cognitive or neuropsychiatric impairment that impairs the patient's ability to answer the CRQ (or similar tool). Patients enrolled in PR are to be excluded if he/she is unable to read and/or write, or who have significant cognitive or neuropsychiatric impairment that would preclude ability to answer the CRQ (or similar tool).	External audit, Documentation of original self-assessment, Management data	Population: regional/network, Clinicians: Group, Program: Other

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				a private interview space. The numerator is calculated as follows: A patient is counted as having increased his/her HRQOL score (measured by CRQ) if the HRQOL score at PR program completion is at least 1.0 points higher than the HRQOL score at PR program entry. The Chronic Respiratory Disease Questionnaire provides a composite score of the patient's perception of their current health status and impact	higher than the HRQOL score at PR program entry. The Chronic Respiratory Disease Questionnaire provides a composite score of the patient's perception of their current health status and impact on daily life. The Chronic Respiratory Disease Questionnaire is a 20 item interview instrument that measures patient perceptions of dyspnea, fatigue, emotional function, and mastery. The CRQ uses a 7-point numeric	Adjustments: no risk adjustment necessary Not applicable		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				on daily life. The Chronic Respiratory Disease Questionnaire is a 20 item interview instrument that measures patient perceptions of dyspnea, fatigue, emotional function, and mastery. The CRQ uses a 7-point numeric Likert-type scale. A change in the score of 0.5 on the 7 point scale, reflects a clinical significant small change (Redelmeier, et al. 1996; Jaeschke, et al., 1989). A change of 1.0 reflects a moderate change. Reliability and	Likert-type scale. A change in the score of 0.5 on the 7 point scale, reflects a clinical significant small change (Redelmeier, et al. 1996; Jaeschke, et al., 1989). A change of 1.0 reflects a moderate change. Reliability and validity have been reported in multiple studies (Martin, 1994; Guyatt, et al. 1987). Martin LL. Validity and reliability of a quality-of-life instrument. The chronic respiratory disease questionnaire.			

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				validity have been reported in multiple studies (Martin, 1994; Guyatt, et al. 1987). Martin LL. Validity and reliability of a quality-of-life instrument. The chronic respiratory disease questionnaire. Clin Nurs Res 1994;3:146-156. Guyatt GH, Berman LB, Townsend M, Puglsey SO, Chambers LW. A measure of quality of life for clinical trials in chronic lung disease. Thorax 1987;42:773-778. Redelmeier DA,	Clin Nurs Res 1994;3:146-156. Guyatt GH, Berman LB, Townsend M, Puglsey SO, Chambers LW. A measure of quality of life for clinical trials in chronic lung disease. Thorax 1987;42:773-778. Redelmeier DA, Guyatt GH, Goldstein RS. Assessing the minimal important difference in symptoms: a comparison of two techniques. J Clin Epidemiol 1996;49:1215-1219. Jaeschke R, Singer J, Guyatt GH. Measurement			

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Guyatt GH, Goldstein RS. Assessing the minimal important difference in symptoms: a comparison of two techniques. J Clin Epidemiol 1996;49:1215-1219. Jaeschke R, Singer J, Guyatt GH. Measurement of health status ascertaining the minimal clinically important difference. Controlled Clin Trials 1989;10:407-415.	of health status ascertaining the minimal clinically important difference. Controlled Clin Trials 1989;10:407-415.			
OT1-020-09	Functional capacity in COPD patients before and after	AACVPR	The percentage of patients with COPD who are enrolled in pulmonary rehabilitation	Number of patients with clinician diagnosed COPD who have participated in PR	All patients with COPD, during the reporting period, who are enrolled in a pulmonary rehabilitation	Patients who are unable to perform a 6MWT for health and/or safety reasons, and those who	Management data, pharmacy data, Documentation of original self-assessment	Population: regional/network, Program: Other

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
	pulmonary rehabilitation		(PR) who are found to increase their functional capacity by at least ~~54~~ 25 meters (~~176~~82 feet), as measured by a standardized 6 minute walk test (6MWT).	and have been found to increase their functional capacity by at least ~~54~~25 meters (~~176~~82 feet), as measured by 6MWT distance at the beginning and the end of PR. To perform the 6 minute walk test (6MWT) the patient is instructed to walk as fast and as far as they can in 6 minutes, but they are allowed to stop and rest during the test, if needed. The total distance covered in 6 minutes is measured (in meters or feet). The numerator is	program. To perform the 6 minute walk test (6MWT) the patient is instructed to walk as fast and as far as they can in 6 minutes, but they are allowed to stop and rest during the test, if needed. The total distance covered in 6 minutes is measured (in meters or feet). The numerator is calculated by the following formula: A patient is counted as having experienced a significant increase in functional capacity if	have not completed at least 10 PR sessions within 3 months of program entry. Absolute contraindications for the 6MWT include the following: unstable angina during the previous month and myocardial infarction during the previous month. Relative contraindications include a resting heart rate of more than 120, a systolic blood pressure of more than 180 mm Hg, and a diastolic blood pressure of more than 100 mm Hg.		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				calculated by the following formula: A patient is counted as having experienced a significant increase in functional capacity if (6MWT distance at program completion - 6MWT distance at program entry)>= ~~54~~25 meters (~~176~~82 feet). The 6 minute walk test (6MWT) is a practical, simple, standardized, and validated test that measures the distance that a patient can quickly walk on a flat, hard surface	(6MWT distance at program completion - 6MWT distance at program entry)>= ~~54~~25 meters (~~176~~82 feet). The 6 minute walk test (6MWT) is a practical, simple, standardized, and validated test that measures the distance that a patient can quickly walk on a flat, hard surface in a period of 6 minutes (6MWD). It evaluates the global and integrated responses of all the systems involved during exercise, including the	Additional exclusion criteria include significant orthopedic, neurological, cognitive or psychiatric impairment. Adjustments: no risk adjustment necessary Not applicable		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				in a period of 6 minutes (6MWD). It evaluates the global and integrated responses of all the systems involved during exercise, including the pulmonary and cardiovascular systems, systemic circulation, peripheral circulation, blood, neuromuscular units, and muscle metabolism. The 6MWT provides specific testing related to the activity of daily living, walking.(Guyatt, G.H., et al., 1984. Guyatt, G.H., et al., 1985, Sciurba, F.C. and W.A.	pulmonary and cardiovascular systems, systemic circulation, peripheral circulation, blood, neuromuscular units, and muscle metabolism. The 6MWT provides specific testing related to the activity of daily living, walking.(Guyatt, G.H., et al., 1984. Guyatt, G.H., et al., 1985, Sciurba, F.C. and W.A. Slivka, Steele, B). In performing the 6MWT, it has been reported that a ~~54~~25 meter (~~176~~82 feet) difference in 6MW difference is clinically significant			

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Slivka, Steele, B). In performing the 6MWT, it has been reported that a ~~54~~25 meter (~~176~~82 feet) difference in 6MW difference is clinically significant (identified as clear change in clinical status) when compared to differences in self-rating of walking ability (Redelmeier, D.A., et al). The strongest indication for the 6MWT is for measuring the response to medical interventions in patients with moderate to severe heart or	(identified as clear change in clinical status) when compared to differences in self-rating of walking ability (Redelmeier, D.A., et al). The strongest indication for the 6MWT is for measuring the response to medical interventions in patients with moderate to severe heart or lung disease. Specific instructions regarding the administration of the 6MWT have been developed and published by the American Thoracic Society			

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				lung disease. Specific instructions regarding the administration of the 6MWT have been developed and published by the American Thoracic Society (ATS, 2002). COPD (chronic obstructive pulmonary disease includes a clinician diagnosis of COPD, chronic bronchitis and / or emphysema (ICD-9 Codes include 490-492, 494, 496: Chronic obstructive pulmonary disease (COPD) includes chronic bronchitis (ICD-9	(ATS, 2002). COPD (chronic obstructive pulmonary disease includes a clinician diagnosis of COPD, chronic bronchitis and / or emphysema (ICD-9 Codes include 490-492, 494, 496: Chronic obstructive pulmonary disease (COPD) includes chronic bronchitis (ICD-9 codes 490-491), emphysema (ICD-9 code 492),bronchiectasis (ICD-9 code 494), and chronic airway obstruction (ICD-9 code 496). These diseases are			

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				codes 490-491), emphysema (ICD-9 code 492),bronchiectasis (ICD-9 code 494), and chronic airway obstruction (ICD-9 code 496). These diseases are commonly characterized by irreversible airflow limitation. Guyatt, G.H., et al., Effect of encouragement on walking test performance. Thorax, 1984. 39(11): p. 818-22. Guyatt, G.H., et al., The 6-minute walk: a new measure of exercise capacity in patients with chronic heart failure. Canadian	commonly characterized by irreversible airflow limitation. Guyatt, G.H., et al., Effect of encouragement on walking test performance. Thorax, 1984. 39(11): p. 818-22. Guyatt, G.H., et al., The 6-minute walk: a new measure of exercise capacity in patients with chronic heart failure. Canadian Medical Association Journal, 1985. 132(8): p. 919-23. Redelmeier, D.A., et al., Interpreting small differences in functional status: the six minute walk test			

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Medical Association Journal, 1985. 132(8): p. 919-23. Redelmeier, D.A., et al., Interpreting small differences in functional status: the six minute walk test in chronic lung disease patients. American Journal of Respiratory and Critical Care Medicine, 1997. 155: p. 1278-1282. Sciurba, F.C. and W.A. Slivka, Six minute walk testing. Seminars in Respiratory and Critical Care Medicine, 1998. 19(4): p. 383-392. Steele, B., Timed walking tests of exercise capacity	in chronic lung disease patients. American Journal of Respiratory and Critical Care Medicine, 1997. 155: p. 1278-1282. Sciurba, F.C. and W.A. Slivka, Six minute walk testing. Seminars in Respiratory and Critical Care Medicine, 1998. 19(4): p. 383-392. Steele, B., Timed walking tests of exercise capacity in chronic cardiopulmonary illness. Journal of Cardiopulmonary Rehabilitation, 1996. 16: p. 25-33.			

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				in chronic cardiopulmonary illness. Journal of Cardiopulmonary Rehabilitation, 1996. 16: p. 25-33.				
OT1-023-09	Intensive care unit (ICU) length-of-stay (LOS)	Philip R. Lee Institute for Health Policy Studies, University of California San Francisco	For all patients admitted to the ICU, total duration of time spent in the ICU until time of discharge; both observed and risk-adjusted LOS reported with the predicted LOS measured using a adjustment model based on the (Mortality Probability Model) MPM III	For all eligible patients admitted to the ICU, the time at discharge from ICU (either death or physical departure from the unit) minus the time of admission (first recorded vital sign on ICU flow sheet) Eligible patients include those with an ICU stay of at least 4 hours and >18 years of age whose primary reason for	Total number of eligible patients who are discharged (including deaths and transfers) Eligible patients include those with an ICU stay of at least 4 hours and >18 years of age whose primary reason for admission does not include trauma, burns, or immediately post-coronary artery bypass graft surgery (CABG),	<18 years of age at time of ICU admission, ICU readmission, <4 hours in ICU, primary admission due to trauma, burns, or immediately post-CABG, admitted to exclude myocardial infarction (MI) and subsequently found without MI or any other acute process requiring ICU care <18 years of age at time of ICU	~~Pharmacy data, documentation of original self-assessment~~ Paper medical record/flow-sheet, electronic health/medical record, lab data	~~Clinicians: Group, Clinicians:~~ Other: Hospital or ICU

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				admission does not include trauma, burns, or immediately post-coronary artery bypass graft surgery (CABG), as these patient groups are known to require unique risk-adjustment. Only index (initial) ICU admissions are recorded given that patient characteristics of readmissions are known to differ.	as these patient groups are known to require unique risk-adjustment. Only index (initial) ICU admissions are recorded given that patient characteristics of readmissions are known to differ.	admission (with time of ICU admission abstracted preferably from ICU vital signs flowsheet), ICU readmission (i.e. not the patient's first ICU admission during the current hospitalization), <4 hours in ICU, primary admission due to trauma, burns, or immediately post-CABG, admitted to exclude myocardial infarction (MI) and subsequently found without MI or any other acute process requiring ICU care Adjustments:		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						risk-adjustment devised specifically for this measure/condition Risk-adjustment variables include: age, heart rate >=150, SBP <=90, chronic renal, acute renal, GIB, cardiac arrhythmia, intracranial mass effect, mechanical ventilation, received CPR, cancer, cerebrovascular incident, cirrhosis, coma, status post elective surgery, zero factor status (no risk factors other than age), and full code status (no restrictions on		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						therapies or interventions at the time of ICU admission). The LOS risk-adjustment model is based on the MPM III (mortality probability model) with coefficients customized for the population of interest.		
OT1-~~-~~024-09	Intensive care: I~~i~~n-hospital mortality rate	Philip R. Lee Institute for Health Policy Studies,University of California San Francisco	For all adult patients admitted to the intensive care unit (ICU), the percentage of patients whose hospital outcome is death; both observed and risk-adjusted mortality rates are reported	Total number of eligible patients whose hospital outcome is death. Eligible patients include those with an ICU stay of at least 4 hours and >18 years of age whose primary reason for admission does not include	Total number of eligible patients who are discharged (including deaths and transfers) Eligible patients include those with an ICU stay of at least 4 hours and >18 years of age whose primary reason for	<18 years of age at time of ICU admission, ICU readmission, <4 hours in ICU, primary admission due to trauma, burns, or immediately post-CABG, admitted to exclude myocardial infarction (MI) and subsequently	~~Pharmacy data, documentation of original self-assessment~~ Paper medical record/flow-sheet, electronic health/medical record, lab data	~~Clinicians: Group, Clinicians:~~ Other: Hospital or ICU

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			with predicted rates based on the Mortality Probability Admission (MPM III) model.	trauma, burns, or immediately post-coronary artery bypass graft surgery (CABG), as these patient groups are known to require unique risk-adjustment. Only index (initial) ICU admissions are recorded given that patient characteristics of readmissions are known to differ.	admission does not include trauma, burns, or immediately post-coronary artery bypass graft surgery (CABG), as these patient groups are known to require unique risk-adjustment. Only index (initial) ICU admissions are recorded given that patient characteristics of readmissions are known to differ.	found without MI or any other acute process requiring ICU care <18 years of age at time of ICU admission (with time of ICU admission abstracted preferably from ICU vital signs flowsheet), ICU readmission (i.e. not the patient's first ICU admission during the current hospitalization), <4 hours in ICU, primary admission due to trauma, burns, or immediately post-CABG, admitted to exclude myocardial infarction (MI)		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						and subsequently found without MI or any other acute process requiring ICU care Adjustments: risk-adjustment devised specifically for this measure/condition Risk-adjustment variables include: age, heart rate >=150, SBP <=90, chronic renal, acute renal, GIB, cardiac arrhythmia, intracranial mass effect, mechanical ventilation, received CPR, cancer, cerebrovascular incident, cirrhosis, coma, status post		

Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						elective surgery, zero factor status (no risk factors other than age), and full code status (no restrictions on therapies or interventions at the time of ICU admission). The risk-adjustment model is based on the MPM III (mortality probability model) with coefficients customized for the population of interest.		

NQF
National Quality Forum

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, FIRST REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT

Appendix B—Main Steering Committee

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Lee Fleisher, MD (Co-Chair)

University of Pennsylvania, Philadelphia, PA

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David S. P. Hopkins, MS, PhD

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American College of Gastroenterology, Norfolk, VA

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ActiveHealth Management, Sausalito, CA

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HealthPartners, Minneapolis, MN

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Johnson & Johnson Pharmaceutical Services, LLC, Raritan, NJ

Lee Newcomer, MD, MHA

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NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, FIRST REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT

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NATIONAL QUALITY FORUM

APPENDIX C: NQF-ENDORSED® OUTCOMES MEASURES as of APRIL 2010

NQF #	TITLE	STEWARD
Cross-cutting Measures		
541	Proportion of days covered (PDC): 5 rates by therapeutic category	NCQA
542	Adherence to chronic medications	CMS
22	Drugs to be avoided in the elderly: a. Patients who receive at least one drug to be avoided, b. Patients who receive at least two different drugs to be avoided	NCQA
138	Urinary catheter-associated urinary tract infection for intensive care unit (ICU) patients	CDC
139	Central line catheter-associated blood stream infection rate for ICU and high-risk nursery (HRN) patients	CDC
140	Ventilator-associated pneumonia for ICU and high-risk nursery (HRN) patients	CDC
141	Patient fall rate	ANA
201	Pressure ulcer prevalence	TJC
202	Falls with injury	ANA
263	Patient burn	ASCQC
265	Hospital transfer/admission	ASCQC
266	Patient fall	ASCQC
267	Wrong site, wrong side, wrong patient, wrong procedure, wrong implant	ASCQC
299	Surgical site infection rate	CDC
337	Decubitus ulcer (PDI 2)	AHRQ
344	Accidental puncture or laceration (PDI 1) (risk adjusted)	AHRQ
345	Accidental puncture or laceration (PSI 15)	AHRQ

NQF #	TITLE	STEWARD
346	Iatrogenic pneumothorax (PSI 6) (risk adjusted)	AHRQ
347	Death in low mortality DRGs (PSI 2)	AHRQ
348	Iatrogenic pneumothorax in non-neonates (PDI 5) (risk adjusted)	AHRQ
349	Transfusion reaction (PSI 16)	AHRQ
350	Transfusion reaction (PDI 13)	AHRQ
351	Death among surgical inpatients with serious, treatable complications (PSI 4)	AHRQ
352	Failure to rescue in-hospital mortality (risk adjusted)	Children's Hospital of Philadelphia
353	Failure to rescue 30-day mortality (risk adjusted)	Children's Hospital of Philadelphia
362	Foreign body left after procedure (PDI 3)	AHRQ
363	Foreign body left in during procedure (PSI 5)	AHRQ
364	Incidental appendectomy in the elderly rate (IQI 24) (risk adjusted)	AHRQ
367	Post operative wound dehiscence (PDI 11) (risk adjusted)	AHRQ
368	Post operative wound dehiscence (PSI 14) (risk adjusted)	AHRQ
376	Incidence of potentially preventable VTE	TJC
450	Postoperative DVT or PE (PSI 12)	AHRQ
531	Patient safety for selected indicators	AHRQ
533	Postoperative respiratory failure (PSI #11)	AHRQ
554	Medication reconciliation post-discharge (MRP)	NCQA
167	Improvement in ambulation/locomotion	CMS
171	Acute care hospitalization (risk-adjusted)	CMS
173	Emergent care (risk adjusted)	CMS
174	Improvement in bathing	CMS
175	Improvement in bed transferring	CMS

NQF #	TITLE	STEWARD
176	Improvement in management of oral medications	CMS
177	Improvement in pain interfering with activity	CMS
178	Improvement in status of surgical wounds	CMS
179	Improvement in dyspnea	CMS
181	Increase in number of pressure ulcers	CMS
182	Residents whose need for more help with daily activities has increased	CMS
183	Low-risk residents who frequently lose control of their bowel or bladder	CMS
184	Residents who have a catheter in the bladder at any time during the 14-day assessment period. (risk adjusted)	CMS
185	Recently hospitalized residents with symptoms of delirium (risk-adjusted)	CMS
186	Recently hospitalized residents who experienced moderate to severe pain at any time during the 7-day assessment period	CMS
187	Recently hospitalized residents with pressure ulcers (risk adjusted)	CMS
191	Residents who lose too much weight	CMS
192	Residents who experience moderate to severe pain during the 7-day assessment period (risk-adjusted)	CMS
193	Residents who were physically restrained daily during the 7-day assessment period	CMS
194	Residents who spent most of their time in bed or in a chair in their room during the 7-day assessment period	CMS
195	Residents with a decline in their ability to move about in their room and the adjacent corridor.	CMS
196	Residents with a urinary tract infection	CMS
197	Residents with worsening of a depressed or anxious mood.	CMS
198	High-risk residents with pressure ulcers	CMS

NQF #	TITLE	STEWARD
199	Average-risk residents with pressure ulcers	CMS
422	Functional status change for patients with knee impairments	FOTO
423	Functional status change for patients with hip impairments	FOTO
424	Functional status change for patients with foot/ankle impairments	FOTO
425	Functional status change for patients with lumbar spine impairments	FOTO
426	Functional status change for patients with shoulder impairments	FOTO
427	Functional status change for patients with elbow, wrist or hand impairments	FOTO
428	Functional status change for patients with general orthopedic impairments	FOTO
429	Change in basic mobility as measured by the AM-PAC	CREcare
430	Change in daily activity function as measured by the AM-PAC	CREcare
442	Functional communication measure: writing	American Speech-Language-Hearing Association
443	Functional communication measure: swallowing	American Speech-Language-Hearing Association
444	Functional communication measure: spoken language expression	American Speech-Language-Hearing Association
445	Functional communication measure: spoken language comprehension	American Speech-Language-Hearing Association
446	Functional communication measure: reading	American Speech-Language-Hearing Association
447	Functional communication measure: motor speech	American Speech-

NQF #	TITLE	STEWARD
		Language-Hearing Association
448	Functional communication measure: memory	American Speech-Language-Hearing Association
449	Functional communication measure: attention	American Speech-Language-Hearing Association
200	Death among surgical in-patients with treatable serious complications (failure to rescue)	AHRQ
530	Mortality for selected conditions	AHRQ
5	CAHPS clinician/group surveys - (adult primary care, pediatric care, and specialist care surveys)	AHRQ
6	CAHPS Health Plan Survey v 4.0 - adult questionnaire	AHRQ
7	NCQA supplemental items for CAHPS 4.0 adult questionnaire (CAHPS 4.0H)	NCQA
8	Experience of Care and Health Outcomes (ECHO) Survey (behavioral health, managed care versions)	AHRQ
9	CAHPS Health Plan Survey v 3.0 children with chronic conditions supplement	AHRQ
10	Young Adult Health Care Survey (YAHCS)	Oregon Health & Science University
11	Promoting Healthy Development Survey (PHDS)	Oregon Health & Science University
166	HCAHPS	AHRQ
228	3-Item Care Transition Measure (CTM-3)	University of Colorado Health Sciences Center
517	CAHPS® Home Health Care Survey	CMS
327	Risk-adjusted average length of inpatient hospital Stay	Premier, Inc
328	Inpatient hospital average length of stay (risk adjusted)	United Health Group
329	All-cause readmission index (risk adjusted)	United Health Group

NQF #	TITLE	STEWARD
330	30-Day all-cause risk standardized readmission rate following heart failure hospitalization (risk adjusted)	CMS
331	Severity-standardized average length of stay—routine care (risk adjusted)	Leapfrog Group
332	Severity-standardized ALOS - special care	Leapfrog Group
333	Severity-standardized ALOS – deliveries	Leapfrog Group
495	Median time from ED arrival to ED departure for admitted ED patients	CMS
496	Median time from ED arrival to ED departure for discharged ED patients	CMS
497	Admit decision time to ED departure time for admitted patients	CMS
498	Door to diagnostic evaluation by a qualified medical personnel	LSU
499	Left without being seen	LSU