NATIONAL QUALITY FORUM

TO: NQF Members

FR: NQF Staff

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

DA: August 16, 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, Second Report for Phases 1 and 2: A Consensus Report*, concluded on July 13, 2010. NQF received 149 comments from 25 organizations on the draft report. The breakdown of the comments by Member Council is as follows:

Consumers – 1	Health Professionals – 5
Purchasers – 0	Public Health/Community – 0
Health Plans – 4	QMRI – 3
Providers – 7	Supplier and Industry – 0
Non-members – 5	

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

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

Comments and Their Disposition

General comments

The Committee was advised that many comments were supportive of the report's recommendations and some comments addressed concerns about composite measures and highlighted gap areas. The Committee had previously discussed these issues in detail. The voting draft of this second report will include the additional information that was added to the first report.

Measure-specific comments

HbA1c control for a selected population (OT1-028-09)

One comment supported this measure as a stand-alone measure. The Committee referred to findings in the recent ACCORD trial that was stopped due to increased cardiovascular mortality for patients under intensive treatment and because achieving HbA1c values near 6 did not improve microvascular impacts.

Action taken: After discussion of the comment, the Committee affirmed its original decision to not recommend this measure.

Post-operative stroke or death in asymptomatic patients undergoing carotid endarterectomy (OT1-011-09)

A comment suggested that the Committee reconsider its recommendation. Measure OT1-011-09 was not recommended due to a lack of a systematic method to identify stroke, because it was believed that the average length-of-stay was short, and because the measure did not adequately address the appropriateness of carotid endarterectomy procedures. NQF staff advised the Committee that the measure developers had not submitted any revisions to the measure and had not responded to the comments.

Action taken: After discussion of the comment, the Committee affirmed its original decision to not recommend this measure.

Coronary artery bypass graft (CABG) procedure and postoperative stroke during the hospitalization or within 7 days of discharge (OT1-012-09)

A comment suggested that the Committee reconsider their recommendation. NQF staff noted that NQF has previously endorsed a risk-adjusted, 30-day post-operative stroke morbidity measure from The Society of Thoracic Surgeons (STS).

Action taken: The Committee believed that this measure did not provide any added value to NQF's measure portfolio. The Committee affirmed its original decision to not recommend this measure.

Acute myocardial infarction (AMI) mortality rate (OT1-010-09)

Several comments discussed the issues of implementation, harmonization, open source availability of the risk model and the comparison of similar endorsed measures.

Action taken: Members of the Committee agreed that the candidate standard is related to the Centers for Medicare and Medicaid Services' 30-day mortality measure. However, they believed that this measure captures different information for stakeholders and provides added value to the current portfolio. Committee members deemed the measure important to publicly report. The Committee did not modify its recommendation.

STS CABG composite score (OT1-013-09)

Some comments expressed issues with the use of registry data. The measure developer indicated that 90percent of the programs in the United States are currently participating in the STS database. The measure developer also stated that they plan to publicly report the individual components as well as the composite result.

Several comments supported the Committee's recommendation of the measure without the star reporting system using the 98 percent confidence intervals.

Action taken: The issue of the embedded star reporting specifications and standardizing confidence intervals will be discussed on a more global level by the Consensus Standards Approval Committee (CSAC) on their August 12 conference call.

Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year (OT2-022-09)

A comment suggested that the measure developer did not provide sufficient evidence to meet the criteria for reliability. The measure developer stated that since the original submission of the measure, approximately 20 health plans have tested the measure using their datasets. Although the results varied across the health plans, the percentages of potentially avoidable complications (PACs) were high.

Action taken: The measure submission form will be updated to include the new data.

Risk-adjusted case mix adjusted elderly surgery outcomes measure (OT1-015-09)
Risk-adjusted colorectal surgery outcome measure (OT2-002-09)

Several comments were raised regarding the issue of the burden of data collection. There was a concern regarding the use of CPT codes rather than ICD-9 codes which are commonly used by hospitals. The measure developer indicated that CPT codes capture a level of procedural detail that ICD-9 codes do not. There were also comments about the burden of medical record abstraction.

Action taken: These comments address issues that were previously discussed by the Committee and the limited number of data elements collected for the measure was emphasized. The Committee agreed that the burden of data collection is offset by the fact that these are good measures that provide important information about quality of surgical care. The Committee did not modify its recommendation.

30-day post-hospital PNA (pneumonia) discharge care transition composite measure (OT2-005-09)

The Committee noted that comments addressed similar issues to those of the AMI (OT1-016-09) and heart failure (OT1-017-09) composites from the first report. Several comments suggested that all component measures within a composite measure should also be endorsed.

Action taken: To address these comments, it was decided that additional information regarding evaluation of composite measures and NQF's composite measures framework and evaluation criteria should be added to the report. The composite measure criteria indicate an expectation that all components of a composite 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.

Optimal Diabetes Care (OT1-009-09)
Numerous comments supported the Committee's decision to defer final recommendation until review of the ICSI guidelines.

Action taken: The Committee will revisit this measure and formally vote on it in August 2010.

Comprehensive Diabetes Care (OT1-029-09)
Various comments were submitted concerning the HbA1c less than 7 percent component of the composite measure.

Action taken: After its discussion of the stand-alone HbA1c measure, the Committee decided to re-evaluate its recommendation of the Comprehensive Diabetes Care measure and to review the weightings again at the same time that they reconsider the revised Optimal Diabetes Care composite measure. The Committee will revisit this measure and formally vote on it in August 2010.

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 Tuesday, September 14, 2010, at 6:00 pm ET – no exceptions.

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

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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 second report of NQF's Patient Outcomes project presents the results of the evaluation of 27 candidate measures considered under NQF's Consensus Development Process (CDP). Nine~~Ten~~ measures are recommended for endorsement as voluntary consensus standards suitable for public reporting and quality improvement.

- Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year (Bridges to Excellence [BTE])
- Proportion of AMI patients that have a potentially avoidable complication (during the index stay or in the 30-day post-discharge period) (BTE)
- Proportion of stroke patients that have a potentially avoidable complication (during the index stay or in the 30-day post-discharge period) (BTE)
- Acute myocardial infarction (AMI) mortality rate (Agency for Healthcare Research & Quality)
- The STS CABG composite score (Society of Thoracic Surgeons)
- ~~Diabetes composite (National Committee for Quality Assurance)~~

- Proportion of pneumonia patients that have a potentially avoidable complication (during the index stay or in the 30-day post-discharge period) (BTE)
- 30-day post-hospital PNA (pneumonia) discharge care transition composite measure (Center for Medicare and Medicaid Services and Brandeis University)
- Risk adjusted colorectal surgery outcomes measure (American College of Surgeons [ACS])
- Risk-adjusted case-mix-adjusted elderly outcomes measure (ACS)

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

BACKGROUND

The results or outcomes of an episode of healthcare 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 http://

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.

CONSIDER DISPARITIES IN ALL WE DO. Some of the greatest performance gaps relate to care of minority populations. Particular attention should be focused on identifying disparities-sensitive performance measures and on identifying the most relevant race/ethnicity/language strata for reporting purposes.

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, infectious disease, eye care and cancer; 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

In May 2010, NQF presented a report of the evaluation of an initial group of 12 measures in the areas of pulmonary/intensive care and cardiovascular conditions. This second report presents the results of the evaluation of 27 candidate consensus standards submitted in response to 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. Despite active searching for measures, few or no measures were submitted for chronic kidney disease, arthritis, eye care, bone and joint, and cancer. The candidate consensus standards were evaluated for suitability as voluntary consensus standards for accountability and public reporting.

The measures were evaluated using NQF's standard evaluation criteria.[4] Technical Advisory Panels (TAPs) rated the subcriteria for each condition-specific candidate consensus standard and identified strengths and weaknesses to assist the project Steering Committee (Committee) in making recommendations. 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 recommendations for endorsement. The Committee evaluated the subcriteria for three cross-cutting measures that were not evaluated by a TAP. 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 27 measures considered under NQF's CDP. As a result of the Committee discussions, three measures were considered out of scope as outcome measures, and two measures were withdrawn by the measure steward from further consideration. Nine~~Ten~~ measures are recommended for endorsement as voluntary consensus standards suitable for public reporting and quality improvement.

Candidate Consensus Standards Recommended for Endorsement

OT2-022-09: Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year (Bridges to Excellence [BTE]) *Percent of adult population aged 18-65 years who were identified as having at least one of the following six chronic conditions: diabetes mellitus (DM), congestive heart failure (CHF), coronary artery disease (CAD), hypertension (HTN), chronic obstructive pulmonary disease (COPD), or asthma, were followed for one-year, and had one or more potentially avoidable complications (PACs).* The Committee was very supportive of this patient-centered measure that provides understandable information about complications. The measure developer noted that this measure was developed as a by-product of their work for the Prometheus episode payment model[5] and the episode for chronic conditions is one year. When determining the appropriate care a patient should receive during an episode, the developers created the concept of "potentially avoidable complications" (PACs) – things that should not generally occur to patients. The PACs were identified by an expert panel (convened by the measure developer) as three types: PACs associated with the index condition, PACs associated with co-morbidities, and PACs associated with a patient safety failure. The measure is a sum of all PACs occurring during the year as determined by coding from administrative data. The developers advise that present on admission

conditions are not included in the PACs nor are patient factors that are considered risk factors. To date the measure has been developed only in the commercial population for patients below 65 years of age. The developers acknowledge that not all PACs may be avoidable all of the time and a target of 0 percent is not appropriate. Current performance on this measure is approximately 70 percent, which indicates much room for improvement. This measure is not appropriate for use at the individual clinician level and should only be used at the group, plan, or system level of analysis. This measure addresses the priority area of patient safety.

OT1-030-09: Proportion of AMI patients that have a potentially avoidable complication (during the index stay or in the 30-day post-discharge period) (BTE)

Percent of adult population aged 18-65 years who were admitted to a hospital with acute myocardial infarction (AMI), were followed for one month after discharge, and had one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 30-day post discharge period.

This measure counts the PACs for 30 days after a primary discharge diagnosis of AMI. The Committee discussed the risk-adjustment methodology used with the developers who reported that RAND is comparing this methodology to other methods. Committee members were supportive of the model, which is based on a combination of factors with both clinical significance and as well as statistical significance. The Committee felt risk models should include risk factors that are clinically meaningful and not just statistically significant. The Committee agreed that the model may evolve over time with more use. The developers explained that CABG patients are excluded as they represent a slightly different population. The Committee recommended this measure because it is meaningful to patients and highlights important adverse outcomes. This measure is not appropriate for use at the individual clinician level and should only be used at the group, plan, or system level of analysis. The measure addresses the priority area of patient safety.

OT1-031-09: Proportion of stroke patients that have a potentially avoidable complication (during the index stay or in the 30-day post-discharge period) (BTE)

Percent of adult population aged 18-65 years who were admitted to a hospital with stroke, were followed for one month after discharge, and had one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 30-day post discharge period.

Similar to measure #OT1-030-09, this measure counts the PACs for patients discharged with stroke. The developer acknowledged that some PACs are not entirely preventable. The measure developer's expert panel believed that while some complications might be preventable, all complications were included because the goal is not to reach zero PACs but to reduce PACs from current high levels. The Committee recommended the measure because it provides important information for patients and offers an important outcome to improve. This measure is not appropriate for use at the individual clinician level and should only be used at the group, plan, or system level of analysis. The measure addresses the priority area of patient safety.

OT2-013-09: Proportion of pneumonia patients that have a potentially avoidable complication (during the index stay or in the 30-day post-discharge period) (BTE)

Percent of adult population aged 18-65 years who were admitted to a hospital with pneumonia, were followed for one month after discharge, and had one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 30-day post discharge period.

This measure counts the PACs for 30 days after hospitalization with a primary diagnosis of pneumonia. As they had with other PAC measures described above, the Committee rated the measure very highly on importance, usability, and feasibility. Consumer members noted the great salience for patients. This measure is not appropriate for use at the individual clinician level and should only be used at the group, plan, or system level of analysis. The measure addresses the priority area of patient safety.

OT1-010-09): Acute myocardial infarction (AMI) mortality rate (Agency for Healthcare Research & Quality [AHRQ])

Number of deaths per 100 discharges with a principal diagnosis code of acute myocardial infarction.

This measure provides a rate of in-hospital AMI mortality using administrative data. It was compared to another endorsed in-hospital AMI mortality measure from The Joint Commission *(161 AMI inpatient mortality)* ~~that is currently endorsed by NQF~~. The Joint Commission is no longer reporting their in-hospital AMI mortality measure on their website in favor of CMS's NQF-endorsed *230 AMI 30-day mortality* measure. This candidate AMI mortality measure from AHRQ differs from measure 161~~those measures~~ in that the risk-adjustment model is based on all patient refined diagnosis related groups (APR DRGs), uses administrative coding rather than manual medical record abstraction, and does include transfers into the facility. Reliability of the coding was demonstrated to be 93-98 percent. The population measured is determined by the principal diagnosis and the definition of AMI is harmonized with the endorsed 30-day AMI mortality measure from CMS. The Committee considered the differences in the measures and the benefits of having both inpatient and 30-day mortality measures. Unlike the 30-day mortality measure which includes only patients aged > 65 years, this candidate standard~~measure~~ includes all patients experiencing AMI as a primary diagnosis. The inpatient measure is more feasible for some implementers since tracking out of hospital deaths can be difficult. Members of the Steering Committee also felt that knowing the proportion of in-hospital deaths was ~~also~~ important ~~as well as~~in addition to the 30-day mortality data and that the two measures are complementary. Committee members asked the developers whether the 30 percent of AMI patients that are excluded with a secondary AMI diagnosis who were not captured in the measure currently. The developer clarified that most excluded patients experienced an AMI postoperatively and the Committee suggested that future measures should address this population.

OT1-013-09: The STS CABG composite score (Society of Thoracic Surgeons [STS])

This multidimensional performance measure is comprised of four domains consisting of 11 individual NQF-endorsed cardiac surgery metrics: (1) operative care—use of the internal mammary artery; (2) perioperative medical care (use of preoperative beta blockade; discharge

beta blockade, antiplatelet agents, and lipid-lowering agents—an "all-or-none" measure); (3) risk-adjusted operative mortality; and (4) risk-adjusted postoperative morbidity (occurrence of postoperative stroke, renal failure, prolonged ventilation, re-exploration, or deep sternal wound infection—an "any-or-none" measure).

The STS database collects data from 90 percent of hospitals performing CABG surgery and 95 percent of all of the CABG surgeries performed in the United States. The Committee generally supported the method of combining process and outcome measures to create a summary score and noted the equal weightings of the four domains. The Committee, however, had numerous concerns with the specified 98 percent confidence levels required for reporting the measure and the embedded star reporting system as reporting protocols have not been specified in other NQF-endorsed measures. The Committee expressed numerous concerns with the specifics of the reporting system presented with this measure. The use of 98 percent confidence limits was felt to be unprecedented and atypical for performance measurement and the Committee strongly recommended that NQF adopt standard statistical reporting criteria that embraces the more typical 95 percent confidence interval used by most reporting initiatives. Many Committee members voiced concern that the star system does not provide understandable information for the public as the public might interpret the one, two, and three stars as good, better, and best, respectively, when, according to the developers, the stars indicate performing below the STS average, performing at the STS average, and performing above the STS average, respectively.

The Steering Committee recommended the composite measure methodology with a numerical result and confidence intervals only. The Committee did not recommend that the star reporting system using the 98 percent confidence intervals be part of the endorsement. Until NQF establishes policies addressing the inclusion of reporting mechanisms, the Committee recommended the composite measure should be endorsed without an embedded reporting mechanism.

In addition, the Committee recommended that NQF consider adopting overall policies that distinguish between how the measure is calculated and how it is reported. If reporting

mechanisms are to be considered by NQF, appropriate evaluation criteria, testing, and standards should be established.

~~**OT1-029-09: Diabetes composite (National Committee for Quality Assurance [NCQA])**~~

~~*The percentage of individuals 18-75 years of age with diabetes (type 1 and type 2) who had each of the following:*~~

- ~~*HbA1c poor control (>9.0 percent)**~~
- ~~*HbA1c control (<8.0 percent)*~~
- ~~*HbA1c control for a special population (<7.0 percent)*~~
- ~~*Blood pressure control (≥140/90 mm Hg)**~~
- ~~*Eye examination*~~
- ~~*Smoking status and cessation advice or treatment*~~
- ~~*LDL control (≥130 mg/dL)*~~
- ~~*LDL control (<100 mg/dL)*~~
- ~~*Nephropathy assessment*~~

~~This composite measure includes eight endorsed component measures which were recently reviewed by the Diabetes TAP for their scheduled maintenance review. While the Committee did not recommend endorsement of the measure #*OT1-028-09 HbA1c control (<7.0 percent)* as a standalone measure as discussed later in this report, the Committee was supportive of all three HbA1c control measures being used together to describe the complete picture of diabetes management by a provider. The composite uses threshold cutoffs and weights to generate a summary score out of a possible 100 points.~~

OT2-005-09: 30-day post-hospital PNA (pneumonia) discharge care transition composite measure (Brandeis University/Centers for Medicare & Medicaid Services [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 PNA for three types of events: readmissions, ED visits, and evaluation and management (E&M) services.

This pneumonia transition composite measure is similar to the care transition composite measures for AMI and heart failure that were recommended in the first report of Patient Outcomes Phases 1 and 2. This composite measure combines the NQF-endorsed® 30-day readmission measure for pneumonia and two new measures: 30-day ED visit measure and 30-day E&M service measure. All three component measures are risk-adjusted using the same risk-adjustment methodology as the previously recommended measures. The Committee rated the measure very highly on importance, usability, and feasibility. The Committee evaluated the new component measures and found them to be satisfactory as components for the composite measure though not sufficiently usable as stand alone measures. The composite measure addresses the priority area of care coordination.

OT2-002-09: Risk-adjusted colorectal surgery outcomes measure (American College of Surgeons [ACS])

This is a hospital based, risk-adjusted, case-mix-adjusted morbidity and mortality composite outcome measure of adults 18+ years undergoing colorectal surgery.

This surgery outcome measure captures mortality and major morbidity for colorectal surgery and the measures is currently used in the National Surgical Quality Improvement Program (NSQIP)[6] where 270 hospitals participate. The measure has been specified for broader implementation by hospitals who do not participate in NSQIP. The risk-adjustment model uses a parsimonious set of clinical risk factors collected in the database. The sample size requirement of 65 cases per year would capture only 40 percent to 50 percent of hospitals but would capture 85 percent of colorectal surgery cases. Overall, the Steering Committee rated the measure highly though feasibility was rated ~~feasibility~~ lower given the reliance on clinical data that could not be collected using administrative data. In response to concerns expressed during comment ~~from commenters~~ about the burden of data collection, the Committee acknowledged that there was some ~~the~~ burden but believed~~felt~~ it was offset by having ~~good~~robust measures in this topic area. The measure addresses the priority area of patient safety.

OT1-015-09: Risk-adjusted case-mix-adjusted elderly outcomes measure (ACS)

This is a hospital based, risk-adjusted, case-mix-adjusted elderly surgery aggregate clinical outcomes measure of adults 65 years of age and older.

This surgery outcomes measure captures mortality and major morbidity for many different surgeries. Groups of risk-similar surgeries are scaled and the scores are used in the regression model. The Committee supported the broad scope of the measure and clarified with the developer that hip fractures from standing or walking would be included in the measure, though a fracture from a fall or other major trauma would not be. Committee members suggested that a separate measure for outcomes of hip fracture would fill a huge gap for the elderly population as well as a similar measure for patients under the age of 65. As with the colorectal surgery measure, Committee member highlighted the data abstraction burden and the need to conform to the NSQIP methodology as challenges to feasibility for non-NSQIP hospitals. The Committee acknowledged the burden with data collection but ~~felt~~believed that the burden was offset by having a ~~good~~ cross-cutting measure on outcomes. This measure addresses the priority area of patient safety.

Candidate Consensus Standards not Recommended for Endorsement

OT1-011-09: Post-operative stroke or death in asymptomatic patients undergoing carotid endarterectomy (Society for Vascular Surgery [SVS])

Percentage of patients without carotid territory neurologic or retinal symptoms within the 12 months immediately preceding carotid endarterectomy (CEA) who experience stroke or death following surgery while in the hospital. This measure is proposed for both hospitals and individual surgeons.

Stroke and death are typical outcomes to assess in patients undergoing carotid endarterectomy (CEA). The Committee has numerous concerns with this in-hospital measure for asymptomatic patients undergoing CEA, including the 2-day average length of stay for carotid endarterectomy patients which limits the window for capturing stroke complications and the lack of a standardized evaluation for stroke. TAP members noted the variation in diagnosis of stroke depending on whether the assessment is performed by the surgeon, a neurologist or use of a

standardized assessment tool. Committee members also noted that the measure does not address the appropriate use of carotid endarterectomy procedures, which may be another focus for measurement. In addition, data were not provided by the measure developer on the reliability of the results and the stroke diagnosis.

OT1-012-09: Coronary artery bypass graft (CABG) procedure and postoperative stroke during the hospitalization or within 7 days of discharge (Ingenix*)*

This measure identifies patients 20 years and older with a coronary artery bypass graft (CABG) procedure who had a postoperative stroke (CVA) during the hospitalization or within seven days of discharge.

NQF has previously endorsed a risk-adjusted, 30-day postoperative stroke morbidity measure for CABG patients from STS. The Committee did not believe that this candidate measure provided added value as it is not risk-adjusted and includes a shorter observation period. The Cardiovascular TAP noted that strokes are more frequently identified by neurologists rather than surgeons and that use of a stroke assessment tool would standardize capture of the data.

OT1-028-09: HbA1c control for a selected population (National Committee for Quality Assurance [NCQA]*)*

Comprehensive diabetes care: The percentage of patients 18-65 years of age with either type I or type II diabetes who had an HbA1c level of less than or equal to 7.0 percent.

This candidate standard is part of a group of process and outcome measures for diabetes, most of which have been endorsed by NQF. This measure assesses a smaller population compared to the other HbA1c control measures, focusing on younger patients without significant comorbidities. The Diabetes/Metabolic TAP and Steering Committee members discussed the implications of the recent published results of the ADVANCE[7] and ACCORD trials,[8,9] that suggested that very strict control does not lead to better clinical outcomes and may be associated with significant side effects. Committee members also noted that the measure is not risk-adjusted. The Committee thought this measure would be valuable when used with the other NQF-endorsed HbA1c control measures (#0575: HgbA1c <8% and #0059: HgbA1c >9%) as a group, but not as a stand-alone

measure. The measure developer did not agree with grouping the three HbA1c control measures together so the Committee did not recommend this measure, except within the diabetes composite measure.

OT2-003-09: 30-day post-hospital PNA discharge ED measure (Brandeis University/CMS)

This measure estimates the percentage of Medicare beneficiaries age 65 years and older discharged from the hospital with the diagnosis of pneumonia (PNA) who had an emergency department (ED) visit within 30 days of the hospital discharge and prior to any hospital readmission.

OT2-004-09: 30-day post-hospital PNA discharge evaluation and management service visit measure (Brandeis University/CMS)

This measure estimates the percentage of eligible Medicare hospital discharges with a diagnosis of pneumonia (PNA) for which beneficiaries receive an evaluation and management (E&M) service within 30 days of hospital discharge and prior to a hospital readmission or ED visit.

These two measures are included in the recommended pneumonia care transition composite measure previously recommended. As with the care transition composite measures for heart failure and AMI, the Committee did not consider the individual measures for ED visits and E&M service sufficiently strong as stand-alone measures. Concerns were raised by some Committee members on the use of a hierarchical risk model and they pointed to the information provided in the technical report that demonstrates that application of the hierarchical model eliminated 50 percent of the outliers.

OT2-008-09: Bariatric surgery and complications during the hospitalization or within 180 days of discharge (Ingenix)

This measure identifies patients 12 years and older with bariatric surgery who had a defined complication during hospitalization or within 180 days of discharge.

OT2-012-09: Bariatric surgery and complications during the hospitalization or within 30 days of discharge (Ingenix*)*

This measure identifies patients 12 years and older with bariatric surgery who had a defined complication during hospitalization or within 30 days of discharge.

The GI/Biliary TAP and Steering Committee had concerns with the lack of risk adjustment for these measures. Committee members felt that patient risk was likely to vary based on degree of obesity (body mass index [BMI]) 30-35 compared to BMI >50), type of surgery (laparoscopy compared to open surgical procedures) and comorbidities. The developer offered possible stratifications for BMI (30-34.9; 35-39.9 and >40) by four types of procedure or by the number of co-morbidities. The developer noted that only 55 percent of bariatric surgery cases include the codes to capture BMI. Committee members felt that these measures need further development and testing to determine the best methods to adjust for patient risk factors before they could be considered for endorsement.

OT2-015-09: Functional assessment of chronic illness therapy-fatigue (FACIT-F) (FACIT*)*

The Functional Assessment of Chronic Illness Therapy-Fatigue Scale (FACIT-F Scale) is a 13-item questionnaire that assesses self-reported fatigue and its impact upon daily activities and function. It was developed in 1994-1995 to meet a growing demand for the precise evaluation of fatigue associated with anemia in cancer patients. Subsequent to its development, it has been employed in over 70 published studies including over 20,000 people. Since 1995, studied groups have included cancer patients receiving chemotherapy, cancer patients not receiving chemotherapy, long term cancer survivors, childhood cancer survivors and several other clinical samples including people with rheumatoid arthritis, multiple sclerosis, psoriasis, paroxysmal nocturnal hemoglobinuria, and Parkinson's disease, as well as the general United States population. In all cases, the FACIT-F Scale has been found to be reliable and valid. It has been validated for use in adults with chronic health conditions. There is also a validated modified version suitable with pediatric populations. It has been translated into over 60 non-English languages.

OT2-016-09: Functional assessment of cancer therapy-lung (FACT-L) (FACIT*)*

The Functional Assessment of Cancer Therapy-Lung (FACT-L) Scale is a 36-item self-report instrument which measures multidimensional quality of life. It was developed from 1987-1993 and was first published in 1995. The FACT-L meets a growing need for disease-specific health-related quality of life (HRQOL) questionnaires that address the general and unique concerns of patients diagnosed with lung cancer. Subsequent to its development, it has been employed in over 20 papers from 15 unique data sets including over 2,500 people with lung cancer. Since 1995, studied groups have included cancer patients receiving chemotherapy, cancer patients receiving radiotherapy, terminally-ill patients, and disease-free survivors. In all cases, the FACT-L scale has been found to be reliable and valid. It has been validated with adult lung cancer patients and disease-free survivors.

OT2-017-09: Functional assessment of cancer therapy-breast (FACT-B) (FACIT*)*

The measurement system, under development since 1987, began with the creation of a generic CORE questionnaire called the Functional Assessment of Cancer Therapy-General (FACT-G). The FACT-G (now in Version 4) is a 27-item compilation of general questions divided into four primary QOL domains: physical well-being, social/family well-being, emotional well-being, and functional well-being. It is considered appropriate for use with patients with any form of cancer, and has also been used and validated in other chronic illness conditions (e.g., HIV/AIDS and multiple sclerosis) and in the general population (using a slightly modified version). In the case of FACT-B, it is comprised of the aforementioned FACT-G plus the 9-item BCS (breast cancer subscale). Combined, the questionnaire is called the FACT-B.

OT2-019-09: Functional assessment of cancer therapy-general version (FACT-G) (FACIT*)*

The FACIT Measurement System is a collection of QOL questionnaires targeted to the management of chronic illness. "FACIT" (Functional Assessment of Chronic Illness Therapy) was adopted as the formal name of the measurement system in 1997 to portray the expansion of the more familiar "FACT" (Functional Assessment of Cancer Therapy) series of questionnaires into other chronic illnesses and conditions. Thus, FACIT is a broader, more encompassing term that includes the FACT questionnaires under its umbrella. The measurement system, under development since 1987, began with the creation of a generic CORE questionnaire called the Functional Assessment of Cancer Therapy-General (FACT-G). The FACT-G (now in Version 4)

is a 27-item compilation of general questions divided into four primary QOL domains: physical well-being, social/family well-being, emotional well-being, and functional well-being. It is considered appropriate for use with patients with any form of cancer, and has also been used and validated in other chronic illness conditions (e.g., HIV/AIDS and multiple sclerosis) and in the general population (using a slightly modified version).

These measures are a sample of patient–level survey tools available from Functional Assessment of Chronic Illness Therapy (FACIT)[11] that assess patient functioning and quality of life that are generally used in clinical trials and care management. The tools are well-tested and widely used at the individual patient level; however, the tools have not been used to assess the quality of care at a clinician or practice level. The Cancer TAP and Steering Committee agreed the survey tools are excellent, but believed that additional work was needed to determine how they could be used for public reporting and making comparisons among providers.

Candidate Consensus Standards without Final Recommendation

OT1-009-09: Optimal diabetes care (Minnesota Community Measurement)

The percentage of adult diabetes patients who have optimally managed modifiable risk factors (A1c, LDL, blood pressure, tobacco non-use, and daily aspirin usage) with the intent of preventing or reducing future complications associated with poorly managed diabetes.

Patients ages 18-75 with a diagnosis of diabetes, who meet all the numerator targets of this composite measure: A1c <8.0, LDL <100, blood pressure (BP) <130/80, tobacco non-user, and for patients age 41+ daily aspirin use unless contraindicated.

The Committee noted that this "all or none" composite measure aligns with endorsed component measures with the exception of the BP target level at <130/80. Committee members referred to the recently published results of the ACCORD trial[10] that did not find improved outcomes for aggressive blood pressure management below 140/90, while the occurrence of adverse outcomes such as syncope were higher. The Committee generally supported the measure but asked the developers about any potential changes to the measure in light of the ACCORD trial. The developers responded that the measure is based on the guidelines from the Institute for Clinical

Systems Improvement (ICSI) and they will wait until any changes are made to the guidelines before considering changes to the measure. ICSI expects to complete its review of the diabetes guidelines in August 2010. Overall the Committee was supportive of the measure and would recommend after resolution of the BP threshold. In addition, some Committee members suggested that the developer should also consider including eye exams and screening for renal function.

OT1-029-09: Comprehensive Diabetes Care~~composite~~ (National Committee for Quality Assurance [NCQA])

The percentage of individuals 18-75 years of age with diabetes (type 1 and type 2) who had each of the following:

- *HbA1c poor control (>9.0 percent)**
- *HbA1c control (<8.0 percent)*
- *HbA1c control for a special population (<7.0 percent)*
- *Blood pressure control (≥140/90 mm Hg)**
- *Eye examination*
- *Smoking status and cessation advice or treatment*
- *LDL control (≥130 mg/dL)*
- *LDL control (<100 mg/dL)*
- *Nephropathy assessment*

This composite measure includes eight endorsed component measures which were recently reviewed by the Diabetes TAP for their scheduled maintenance review. While the Committee did not recommend endorsement of the measure *#OT1-028-09 HbA1c control (<7.0 percent)* as a ~~standalone~~individual measure as discussed later in this report, the Committee was supportive of all three HbA1c control measures being used together to describe the complete picture of diabetes management by a provider. The composite uses threshold cutoffs and weights to generate a summary score out of a possible 100 points.

Following the member and public comment period, ~~T~~the Committee considered several comments regarding inclusion of the H~~g~~b-A1c <7 component in this composite measure. The Committee revisited the implications of the recent published results of the ADVANCE[7] and ACCORD trials~~,~~[8,9] that suggested that very strict control does not lead to better clinical outcomes and may be associated with significant side effects. The Committee decided to re-evaluate this measure at the same time as the final evaluation of the revised -OT1-009-09 Optimal Diabetes Care measure. An addendum to this report on these two composite measures for diabetes will be distributed following these final evaluations.

Gaps in Desirable Outcome Measures

During its deliberations, the Committee noted the lack of measures for important outcomes, particularly in the areas of health status and functional status. As part of the Patient Outcomes project, the TAPs and Committee are formulating recommendations for development of important, desirable outcome measures. These recommendations will be presented in a later report.

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. **Give more attention to disparities.**
   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 for facilities located in areas of underserved populations, the stratified results would not necessarily be small numbers.

3. **Provide rationale for use of ~~hierarchical~~ risk model methodology ~~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 compared to other methods. The Committee also discussed the use of stepwise modeling that can leave out important confounders or effect modifiers. The Committee recommends that NQF establish more guidance and criteria for evaluating risk models, particularly those that seem to minimize variation and reduce differentiation among providers.

4. **Consider endorsing reporting mechanisms.**
NQF should consider whether evaluation and endorsement should extend to reporting mechanisms and rating systems as a general policy for all projects. If so, appropriate criteria should be established for this evaluation.

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. 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. Information regarding the Prometheus payment model is available at www.prometheuspayment.org.
6. Information regarding the American College of Surgeons' National Surgical Quality Improvement Program (NSQIP) is available at https://acsnsqip.org/main/about_overview.asp .
7. Information regarding the Action in Diabetes and Vascular Disease: Preterax and Diamicro MR Controlled Evaluation (ADVANCE) trial is available at www.advance-trial.com/static/html/prehome/prehome.asp.
8. ACCORD Study Group, Effects of intensive glucose lowering in type 2 diabetes, *N Engl J Med,* 2008;358(24):2545-2559. Epub 2008 Jun 6. Press announcement available at http://public.nhlbi.nih.gov/newsroom/home/GetPressRelease.aspx?id=2573.
9. ACCORD Study Group, Effects of intensive blood-pressure control in type 2 diabetes mellitus, *N Engl J Med,* 2010;362(17):1575-1585. Epub 2010 Mar 14.
10. Information regarding the FACIT tools is available at www.facit.org.
11. ACCORD Study Group, Effects of intensive blood-pressure control in type 2 diabetes mellitus, *N Engl J Med,* 2010;362(17):1575-1585. Epub 2010 Mar 14.

The following table presents the detailed specifications for the proposed consensus standards. All information presented has been derived directly from measures developers without modification or alteration (except where measure developers agreed to such modifications) and is current as of June 01, 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; Bridges to Excellence; Yale University; Brandeis University; the Agency for Healthcare Research and Quality; the National Committee for Quality Assurance; the Centers for Medicare and Medicaid Services (CMS); The Society of Thoracic Surgeons; the American College of Surgeons; 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
OT1-010-09	Acute myocardial infarction (AMI) mortality rate	Agency for Healthcare Research and Quality	Number of deaths per 100 discharges with a principal diagnosis code of acute myocardial infarction.	Number of inpatient deaths (DISP = 20) among cases meeting the inclusion and exclusion rules for the denominator. Time Window: During admission	All discharges, age 18 years and older, with a principal diagnosis code of acute myocardial infarction. Time Window: Typically 12 months, but may be defined by the user. ICD-9-CM Acute Myocardial Infarction (AMI) diagnosis code in the principal diagnosis code position:	• Missing discharge disposition (DISP = missing) • Transferring to another short-term hospital (DISP = 2) • MDC 14 (pregnancy, childbirth, and puerperium) Case-Mix Adjustment: Adjustments were made for age, 3M™ All Patient Refined Diagnosis	Electronic adminstrative data/claims	Facility/ Agency

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					41001 AMI of anterolateral wall, initial episode of care 41011 AMI of other anterior wall, initial episode of care 41021 AMI of inferolateral wall, initial episode of care 41031 AMI of inferoposterior wall, initial episode of care 41041 AMI of other inferior wall, initial episode of care	Groups Risk of Mortality subclass, MDC and transfer in status using a regression-based standardization methodology.		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
					41051 AMI of other lateral wall, initial episode of care 41061 AMI, true posterior wall infarction, initial episode of care 41071 AMI, subendocardial infarction, initial episode of care 41081 AMI of other specified sites, initial episode of care 41091 AMI, unspecified site, initial episode of care			

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
OT1-013-09	The STS CABG composite score©	The Society of Thoracic Surgeons (STS)	This multidimensional performance measure is comprised of four domains consisting of 11 individual NQF-endorsed cardiac surgery metrics: 1) Operative Care (use of the internal mammary artery); 2) Perioperative Medical Care (use of preoperative beta blockade, discharge beta blockade,	Due to the complex methodology used to construct the composite measure, it is impractical to separately discuss the numerator and denominator. The following discussion describes how each domain score is calculated and how these are combined into an overall composite score. Additional documentation is available in the	Please see response in numerator statement above.	Please see response in numerator statement above.	Electronic health/ medical records, electronic clinical data, registry data, lab data, pharmacy data, paper medical record/ flowsheet	Facility/ Agency

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			antiplatelet agents, and lipid-lowering agents—an "all-or-none" measure); 3) Risk-adjusted Operative Mortality; and 4) Risk-adjusted Postoperative Morbidity (occurrence of postoperative stroke, renal failure, prolonged ventilation, re-exploration, or deep sternal wound infection—an "any-or-none"	attached article published as a supplement of *The Annals of Thoracic Surgery*. Time Window: The STS composite score currently is based on one year of data. However, we would request that NQF endorsement not be limited to this window as alternative sampling period may be employed in the future.				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			measure). All measures are based on audited clinical data collected in a prospective registry and are risk-adjusted (with the exception of internal mammary artery use and the four perioperative medications). Based on their percentage scores, a 1 (below average), 2 (average), or 3	Technical Details: The unit of measurement for the STS Composite Score can be either a participant (most often a cardiac surgical practice but occasionally an individual surgeon) or a hospital. The STS composite score is an aggregate of 4 scores corresponding to 4 domains of CABG quality (mortality, morbidity,				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			(above average) star rating is provided for each STS database participant for each performance domain and overall. Furthermore, the composite score is also deconstructed into its components to facilitate performance improvement activities by providers. This scoring methodology has	operative care, perioperative medical care). Each domain score has a theoretical range of 0 to 1 and is interpreted as a probability. A description of these probabilities is presented in Table 1 below. Larger values imply better performance. Although the theoretical range of each score (probability) is 0 to 1, the actual				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			now been implemented for over two years and has become for many stakeholders the preferred method of evaluating cardiac surgery performance. STS plans to make this report publicly available in the near future. (Additional materials are available upon request.)	scores tend to be clustered in the upper end of the 0-1 interval. For reporting purposes, the probabilities are expressed as percentages ranging from 0% to 100%.				
OT1-015-09	Risk adjusted case mix	American College of Surgeons	This is a hospital-based, risk-adjusted, case	The outcome of interest is hospital-specific	Patients undergoing any ACS NSQIP	Adjustments: From 271,368 patient records	Electronic Health/ Medical	Facility/ Agency

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
	adjusted elderly surgery outcomes measure		mix-adjusted, elderly surgery, aggregate, clinical outcomes measure of adults 65 years of age and older.	risk-adjusted mortality, a return to the operating room, or any of the following morbidities as defined by American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP): Cardiac arrest requiring CPR, myocardial infarction, DVT requiring therapy, sepsis, septic shock, deep incisional SSI,	listed (CPT) surgical procedure who are 65 years of age or older (see separate list of ACS NSQIP CPT codes). Data are derived from a systematic sample collected over a one-year period constructed to meet sample size requirements specified for the measure. Details: Cases are	in the 2008 ACS NSQIP data file, 83,832 acceptable records from 211 hospitals (mean/hospital = 397) were analyzed. Records were included if patients were 65 years of age or older and excluded either because of missing values for critical variables or because the	Records, Electronic clinical data, paper medical record/ flowsheet	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				organsSpace SSI, wound disruption, unplanned reintubation without prior ventilator dependence, pneumonia without pre-operative pneumonia, pulmonary embolism, progressive renal insufficiency or acute renal failure without pre-operative renal failure or dialysis, or UTI within 30 days of any ACS	collected so as to match ACS NSQIP inclusion and exclusion criteria, thereby permitting valid application of ACS NSQIP model-based risk adjustment.	primary CPT code could not be categorized into 1 of the 136 pre-established CPT "Groups." These categorizations have been defined and implemented for risk-adjustment in previously published research.* An outcome was defined as 30-day mortality or any serious		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				NSQIP listed (CPT) surgical procedure. Targeted events within 30 days of the operation are included. Details: Mortality-Death within 30 day follow-up period: Any death occurring through midnight on the 30th day after the date of the procedure, regardless of cause, in or out of		morbidity including: cardiac arrest requiring CPR, myocardial infarction, DVT requiring therapy, sepsis, septic shock, organ space SSI, deep incisional SSI, wound disruption, unplanned reintubation without prior ventilator dependence, pneumonia without pre-		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				the hospital. Additional operations within 30 days of the index operation are considered an outcome (return to OR) and are not eligible to become new index cases. Return to the Operating Room within Thirty Days after the Assessed Procedure: Return to the operating room includes all major surgical procedures that		operative pneumonia, pulmonary embolism, progressive renal insufficiency or acute renal failure without pre-operative renal failure or dialysis, urinary tract infection, or return to the operating room, according to ACS NSQIP definitions. Of the 83,832 patients, 13,960 (16.7%)		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				required the patient to be taken to the surgical operating room for intervention of any kind. “Major surgical procedures” are defined as those cases in any and all surgical subspecialties that meet Program criteria for inclusion. Cardiac Arrest Requiring CPR: The absence of cardiac rhythm or		experienced death or a serious morbidity event. CPT Group was originally considered a categorical variable but, because of frequent empty cells, which precluded logistic model convergence (quasi-complete separation), CPT Group was converted to continuous risk		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				presence of chaotic cardiac rhythm that results in loss of consciousness requiring the initiation of any component of basic and/or advanced cardiac life support. Patients with automatic implantable cardioverter defibrillator (AICD) that fire but the patient has no loss of consciousness should be		variable. This was accomplished by making the categorical Group variable a single predictor for mortality/morbidity and invoking the Firth penalized likelihood method in the logistic modeling software (SAS PROC LOGISTIC). For one CPT Group,		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				excluded. Myocardial Infarction: An acute myocardial infarction occurring within 30 days following surgery as manifested by one of the following three criteria: a. Documentation of ECG changes indicative of acute MI(one or more of the following): • ST elevation > 1 mm in two or more contiguous leads • New left bundle		composed of only two subjects, both of whom experience an event, the estimated log odds was unacceptably large and was replaced by the next largest value. The patient-based predicted log odds from this model was then used as a continuous predictor in subsequent		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				branch • New q-wave in two of more contiguous leads b. New elevation in troponin greater than 3 times upper level of the reference range in the setting of suspected myocardial ischemia c. Physician diagnosis of myocardial infarction Deep Vein Thrombosis (DVT)/Requiring		logistic models, which also included the standard predictors. Step-wise logistic regression (P < 0.05 for inclusion), which selected from a total of 26 NSQIP predictors, identified 21 predictors for inclusion in the model. In order of inclusion these variables		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Therapy: The identification of a new blood clot or thrombus within the venous system, which may be coupled with inflammation. This diagnosis is confirmed by a duplex, venogram or CT scan. The patient must be treated with anticoagulation therapy and/or placement of a vena cava filter or clipping of the		were: Log Odds CPT Group, pre-operative Functional Status, ASA Class, Emergent, history of COPD, Wound Class, Ventilator Dependent, Weight Loss, Dyspnea, Steroid Use, Disseminated Cancer, Age Group, Ascites, Smoking, Bleeding		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				vena cava. Sepsis: Sepsis is the systemic response to infection. Report this variable if the patient has TWO OR MORE of the following five clinical signs and symptoms of Systemic Inflammatory Response Syndrome (SIRS): a. Temp >38 degrees C (100.4 degrees F) or < 36 degrees C (96.8		Disorder, Radio Therapy, BMI Class, Previous Vascular Event/Disease, Alcohol Use, Previous Neurological Event/Disease, and Diabetes. The c-statistic was 0.774 and the Hosmer-Lemeshow was 0.002. Because of the very large sample sizes studied here, a statistically significant Hosmer-		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				degrees F) b. HR >90 bpm c. RR >20 breaths/min or PaCO2 <32 mmHg(<4.3 kPa) d. WBC >12,000 cell/mm3, <4000 cells/mm3, or >10% immature (band) forms e. Anion gap acidosis: this is defined by either: • [Na + K] – [Cl + HCO3 (or serum CO2)]. If this number is greater than 16, then an anion gap acidosis is		Lemeshow statistic is not considered informative with respect to calibration. Using only the first three selected variables (Log Odds CPT Group, Functional Status, and ASA Class), the c-statistic was 0.764 and the Hosmer-Lemeshow was 0.002. The use		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				present. • Na – [Cl + HCO3 (or serum CO2)]. If this number is greater than 12, then an anion gap acidosis is present. AND one of the following TWO: a. positive blood culture b. clinical documentation of purulence or positive culture from any site thought to be causative Severe Sepsis/Septic		of these three predictors for modeling was further evaluated. Using a 95% confidence interval for the ratio of observed to expected events (O/E), this three-variable logistic model identified 30 statistical outliers (16 low outliers and 14 high outliers). When the same three variables		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Shock: Sepsis is considered severe when it is associated with organ and/or circulatory dysfunction. Report this variable if the patient has sepsis AND documented organ and/or circulatory dysfunction. Examples of organ dysfunction include: oliguria, acute alteration in mental status, acute respiratory		were used in a random intercept, fixed slope, hierarchical model (SAS PROC GLIMMIX) using only the fixed portion of the prediction equation (NOBLUP option), 28 outliers were detected (14 low outliers and 14 high outliers). Thus, using a 95% confidence		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				distress. Examples of circulatory dysfunction include: hypotension, requirement of inotropic or vasopressor agents. Severe Sepsis/Septic Shock is assigned when it appears to be related to Sepsis and not a Cardiogenic or Hypovolemic etiology. Deep Incisional SSI: Deep Incision SSI is an		interval, logistic and hierarchical models identified 7% of hospitals as high outliers. When the logistic model parameters were applied to an independent validation data set (the 2007 data file composed of 65,056 patients) after coding CPT Groups with log odds derived from the original one-		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				infection that occurs within 30 days after the operation and the infection appears to be related to the operation and infection involved deep soft tissues (for example, fascial and muscle layers) of the incision and at least one of the following: Purulent drainage from the deep incision but not from the organ/space component of the		variable model on 2008 data, the c-statistic was essentially unchanged (c-statistic = 0.762). A GEE (generalized estimating equations) approach (SAS PROC GENMOD) with compound symmetry was used to estimate the intraclass correlation (ICC), which is		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				surgical site; A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever (> 38 C), localized pain, or tenderness, unless site is culture-negative; An abscess or other evidence of infection involving the deep incision is		reported in GENMOD as the exchangeable working correlation. The ICC was 0.00377. The relationship between sample size, the ICC, and reliability is defined as: N = R /[ICC(1 – R)] – R / (1 – R), where N is the required number patients per hospital and R is reliability.		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				found on direct examination, during reoperation, or by histopathologic or radiologic examination; Diagnosis of a deep incision SSI by a surgeon or attending physician. Organ/Space SSI: Organ/Space SSI is an infection that occurs within 30 days after the operation and the infection appears to be related to the operation and		Based on the estimated ICC, patients per hospital to achieve reliability levels of 0.3, 0.4, 0.5, 0.6, and 0.7 are 114, 177, 265, 397, and 617, respectively. For the table detailing risk factors, odds ratios, and parameters for the logistic model, please see attachment (Parsimonious		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				the infection involves any part of the anatomy (for example, organs or spaces), other than the incision, which was opened or manipulated during an operation and at least one of the following: Purulent drainage from a drain that is placed through a stab wound into the organ/space; Organisms isolated from an aseptically		Model for Elderly.doc). For initial year(s) of measure use, ACS NSQIP data-derived model parameters will be used to construct risk-adjusted O/E ratios for participating hospitals. Once data from measure-participating hospitals is substantial,		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				obtained culture of fluid or tissue in the organ/space; An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination; Diagnosis of an organ/space SSI by a surgeon or attending physician.		models will be derived from that data. *References utilizing CPT groups Exclusions: Major multisystem trauma and transplant surgeries are excluded as are surgeries not on the ACS NSQIP CPT list as eligible for selection. Patients who are		

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, SECOND REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT
APPENDIX A: MEASURE SPECIFICATIONS

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Wound Disruption: Separation of the layers of a surgical wound, which may be partial or complete, with disruption of the fascia. Unplanned Intubation for Respiratory/Cardiac Failure (without preoperative ventilator dependent): Patient required placement of an		ASA 6 (brain-death organ donor) are not eligible surgical cases. Surgeries following within 30 d of an index procedure are an outcome (return to OR) and are not eligible to be new index cases. Thus, a patient known to have had a prior surgical operation within 30 days is excluded		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				endotracheal tube and mechanical or assisted ventilation because of the onset of respiratory or cardiac failure manifested by severe respiratory distress, hypoxia, hypercarbia, or respiratory acidosis. In patients who were intubated for their surgery, unplanned intubation occurs after they have been extubated		from having the subsequent surgery considered an index case. NOT ON ELIGIBLE CPT LIST: Approximately 2900 codes are eligible list. MAJOR TRAUMA: A patient who is admitted to the hospital with acute major or multisystem trauma and has surgery for that		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				after surgery. In patients who were not intubated during surgery, intubation at any time after their surgery is considered unplanned. Pneumonia (without preoperative pneumonia): if the patient has pneumonia meeting the definition below AND pneumonia was not present preoperatively. Patients with		trauma is excluded, though any operation performed after the patient has been discharged from that trauma admission can be included. Exclusion of trauma cases does consider magnitude of injuries. If the patient has minor injuries, they are not excluded. If there are		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				pneumonia must meet criteria from both Radiology and Signs/Symptoms/ Laboratory sections listed as follows: Radiology: One definitive chest radiological exam (x-ray or CT) with at least one of the following: New or progressive and persistent infiltrate, Consolidation or opacity, Cavitation. In		multiple severe injuries and the situation is emergent, the case would be excluded. For instance, ground level falls are included as they are not considered multisystem trauma, but a fall from a ladder or a fall from height would be excluded. Any emergent, major or multisystem		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				patients with underlying pulmonary or cardiac disease (e.g. respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary edema, or chronic obstructive pulmonary disease), two or more serial chest radiological exams (x-ray or CT) are required. Signs/Symptoms/ Laboratory FOR ANY		trauma case is excluded. These algorithms are communicated to the data collectors via educational tools. TRANSPLANT: A patient who is admitted to the hospital for a transplant and has a transplant procedure and any additional surgical procedures during the transplant hospitalization		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				PATIENT, at least one of the following three: a. Fever (>38 degrees C or >100.4 degrees F) with no other recognized cause b. Leukopenia (<4000 WBC/mm3) or leukocytosis(=12, 000 WBC/mm3) c. For adults = 70 years old, altered mental status with no other recognized cause AND At least one of the following four:		will be excluded, tough any operation performed after the patient has been discharged from the transplant stay is eligible for selection. ASA 6: A patient classified as ASA Class 6 is not eligible for inclusion.		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				a. 5% Bronchoalveolar lavage (BAL) - obtained cells contain intracellular bacteria on direct microscopic exam (e.g., Gram stain) b. Positive growth in blood culture not related to another source of infection c. Positive growth in culture of pleural fluid d. Positive quantitative culture from				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				minimally contaminated lower respiratory tract (LRT) specimen (e.g. BAL or protected specimen brushing) OR At least two of the following four: a. New onset of purulent sputum, or change in character of sputum, or increased respiratory secretions, or increased				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				suctioning requirements b. New onset or worsening cough, or dyspnea, or tachypnea c. Rales or bronchial breath sounds d. Worsening gas exchange (e.g. O2 desaturations (e.g., PaO2/FiO2 = 240), increased oxygen requirements, or increased ventilator demand) Pulmonary Embolism:				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Lodging of a blood clot in a pulmonary artery with subsequent obstruction of blood supply to the lung parenchyma. The blood clots usually originate from the deep leg veins or the pelvic venous system. Pulmonary embolism is recorded if the patient has a V-Q scan interpreted as high probability of pulmonary				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				embolism or a positive CT spiral exam, pulmonary arteriogram or CT angiogram. Treatment usually consists of: Initiation of anticoagulation therapy, Placement of mechanical interruption (for example Greenfield Filter), for patients in whom anticoagulation is contraindicated or already instituted.				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Progressive Renal Insufficiency (without preoperative renal failure or dialysis): The reduced capacity of the kidney to perform its function as evidenced by a rise in creatinine of >2 mg/dl from preoperative value, but with no requirement for dialysis. Acute Renal Failure Requiring Dialysis (without				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				preoperative renal failure or dialysis): In a patient who did not require dialysis preoperatively, worsening of renal dysfunction postoperatively requiring hemodialysis, peritoneal dialysis, hemofiltration, hemodiafiltration, or ultrafiltration. Urinary Tract Infection: Postoperative symptomatic				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				urinary tract infection must meet ONE of the following TWO criteria: Criterion One: One of the following five: a. fever (>38 degrees C), b. urgency, c. frequency, d. dysuria, e. suprapubic tenderness AND a urine culture of > 100,000 colonies/ml urine with no more than two species of				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				organisms. OR Criterion Two: Two of the following five: a. fever (>38 degrees C), b. urgency, c. frequency, d. dysuria, e. suprapubic tenderness AND ANY ONE or MORE of the following seven: f. Dipstick test positive for leukocyte esterase and/or nitrate, g. Pyuria (>10 WBCs/mm3 or >				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				3 WBC/hpf of unspun urine), h. Organisms seen on Gram stain of unspun urine, i. Two urine cultures with repeated isolation of the same uropathogen with >100 colonies/ml urine in non-voided specimen, j. Urine culture with < 100,000 colonies/ml urine of single uropathogen in patient being treated with				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				appropriate antimicrobial therapy, k. Physician's diagnosis, l. Physician institutes appropriate antimicrobial therapy.				
~~OT1-029-09~~	~~Comprehensive diabetes care~~	~~National Committee for Quality Assurance~~	~~The percentage of individuals 18-75 years of age with diabetes (type 1 and type 2) who had each of the following: • Hemoglobin A1c (HbA1c) testing~~	~~Percentage of members 18-75 years of age with diabetes (type 1 and 2) who had each of the following: 1) HbA1c Testing – An HbA1c test~~	~~Members with diabetes (type 1 and 2) as of December 31 of the measurement year~~	~~Optional Exclusions: • Members with a diagnosis of polycystic ovaries who did not have any face-to-face~~	~~Electronic adminstrative data/claims, Electronic Health/ Medical Record, Electronic clinical data, Lab data, pharmacy~~	~~Clinicians: Group, Clinicians: Individual, Clinicians: Other~~

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			~~• HbA1c poor control (>9.0%)~~ ~~• HbA1c control (<8.0%)~~ ~~• HbA1c control (<7.0%)*~~ ~~• Eye exam (retinal) performed~~ ~~• LDL-C screening~~ ~~• LDL-C control (<100 mg/dL)~~ ~~• Medical attention for nephropathy~~ ~~• BP control (<130/80 mm Hg)~~ ~~• BP control (<140/90 mm Hg)~~	~~performed during the measurement year as identified by claim/encounter or automated lab data.~~ ~~2) HbA1c Poor Control >9%— Use automated lab data to identify the most recent HbA1c test during the measurement year. The member is numerator compliant if the most recent~~		~~encounters with a diagnosis of diabetes, in any setting, during the measurement year or the year prior to the measurement year.~~ • ~~Members with gestational diabetes or steroid-induced diabetes who did not~~	~~data~~	

The following table presents the detailed specifications for the proposed consensus standards. All information presented has been derived directly from measures developers without modification or alteration (except where measure developers agreed to such modifications) and is current as of June 01, 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; Bridges to Excellence; Yale University; Brandeis University; the Agency for Healthcare Research and Quality; the National Committee for Quality Assurance; the Centers for Medicare and Medicaid Services (CMS); The Society of Thoracic Surgeons; the American College of Surgeons; 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
				~~automated HbA1c level is >9.0% or is missing a result or if an HbA1c test was not done during the measurement year. The member is not numerator compliant if the automated result for the most recent HbA1c test during the measurement year is ≤9.0%. An organization that uses CPT Category II codes to identify~~		~~have any face-to-face encounters with a diagnosis of diabetes, in any setting, during the measurement year or the year prior to the measurement year.~~		

The following table presents the detailed specifications for the proposed consensus standards. All information presented has been derived directly from measures developers without modification or alteration (except where measure developers agreed to such modifications) and is current as of June 01, 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; Bridges to Excellence; Yale University; Brandeis University; the Agency for Healthcare Research and Quality; the National Committee for Quality Assurance; the Centers for Medicare and Medicaid Services (CMS); The Society of Thoracic Surgeons; the American College of Surgeons; 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
				~~numerator compliance for this indicator must search for all codes and use the most recent code during the measurement year to evaluate whether the member is numerator compliant. Note: For this indicator, a lower rate indicates better performance (i.e., low rates of poor control indicate better care).~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~3) HbA1c Control <8% Use automated laboratory data to identify the most recent HbA1c test during the measurement year. The member is numerator compliant if the most recent automated HbA1c level is <8.0%. The member is not numerator compliant if the automated result for the most recent HbA1c test~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~is ≥8.0% or is missing a result, or if an HbA1c test was not done during the measurement year. An organization that uses CPT Category II codes to identify numerator compliance for this indicator must search for all codes and use the most recent code during the measurement year to evaluate whether the~~				

The following table presents the detailed specifications for the proposed consensus standards. All information presented has been derived directly from measures developers without modification or alteration (except where measure developers agreed to such modifications) and is current as of June 01, 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; Bridges to Excellence; Yale University; Brandeis University; the Agency for Healthcare Research and Quality; the National Committee for Quality Assurance; the Centers for Medicare and Medicaid Services (CMS); The Society of Thoracic Surgeons; the American College of Surgeons; 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
				~~member is numerator compliant.~~ ~~4) HbA1c Control <7% – Use automated laboratory data to identify the most recent HbA1c test during the measurement year. The member is numerator compliant if the most recent automated HbA1c level is <7.0%. The member is not numerator compliant if the~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~automated result for the most recent HbA1c test is ≥7.0% or is missing a result, or if an HbA1c test was not done during the measurement year.~~ ~~An organization that uses CPT Category II codes to identify numerator compliance for this indicator must search for all codes and use the most recent code during the~~				

The following table presents the detailed specifications for the proposed consensus standards. All information presented has been derived directly from measures developers without modification or alteration (except where measure developers agreed to such modifications) and is current as of June 01, 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; Bridges to Excellence; Yale University; Brandeis University; the Agency for Healthcare Research and Quality; the National Committee for Quality Assurance; the Centers for Medicare and Medicaid Services (CMS); The Society of Thoracic Surgeons; the American College of Surgeons; 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
				~~measurement year to evaluate whether the member is numerator compliant. Note: This indicator uses the eligible population with additional eligible population criteria (e.g., removing members with required exclusions).~~ ~~5) Eye Exam — An eye screening for diabetic retinal disease as~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~identified by administrative data. This includes diabetics who had one of the following:~~ ~~• A retinal or dilated eye exam by an eye care professional (optometrist or ophthalmologist) in the measurement year, or~~ ~~• A negative retinal exam (no evidence of retinopathy) by an eye care~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~professional in the year prior to the measurement year.~~ ~~Refer to codes to identify eye exams. For exams performed in the year prior to the measurement year, a result must be available.~~ ~~6) LDL-C Screening – An LDL-C test performed during the measurement year, as identified by claim/~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~encounter or automated laboratory data. The organization may use a calculated or direct LDL for LDL-C screening and control indicators.~~ ~~7) LDL-C Control <100 mg/dL — Use automated laboratory data to identify the most recent LDL-C test during the measurement year. The member is numerator~~				

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, SECOND REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT
APPENDIX A: MEASURE SPECIFICATIONS

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~compliant if the most recent automated LDL-C level is <100 mg/dL. If the automated result for the most recent LDL-C test during the measurement year is ≥100 mg/dL or is missing, or if an LDL-C test was not done during the measurement year, the member is not numerator compliant. An organization that uses CPT~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~Category II codes to identify numerator compliance for this indicator must search for all codes and use the most recent code during the measurement year to evaluate whether the member is numerator compliant.~~ ~~8) Medical Attention for Nephropathy – A nephropathy screening test or~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~evidence of nephropathy, as documented through administrative data.~~ ~~9) BP Control <130/80 mmHg – Use automated data to identify the most recent BP reading during the measurement year.~~ ~~The member is numerator compliant if the BP is <130/80 mmHg. The~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~member is not compliant if the BP is ≥130/80 mmHg or if there is no automated BP reading during the measurement year. If there are multiple BPs on the same date of service, use the lowest systolic and lowest diastolic BP on that date as the representative BP. An organization that uses CPT Category II codes to identify numerator~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~compliance for this indicator must search for all codes and use the most recent codes during the measurement year to evaluate whether the member is numerator compliant for both systolic and diastolic levels.~~ ~~10) BP Control <140/90 mmHg – Use automated data to identify the most recent BP reading during~~				

The following table presents the detailed specifications for the proposed consensus standards. All information presented has been derived directly from measures developers without modification or alteration (except where measure developers agreed to such modifications) and is current as of June 01, 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; Bridges to Excellence; Yale University; Brandeis University; the Agency for Healthcare Research and Quality; the National Committee for Quality Assurance; the Centers for Medicare and Medicaid Services (CMS); The Society of Thoracic Surgeons; the American College of Surgeons; 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
				~~the measurement year. Refer to Table CDC-N and use the most recent code to evaluate whether the member is numerator compliant. The member is numerator compliant if the BP is <140/90 mmHg. The member is not compliant if the BP is ≥140/90 mmHg or if there is no automated BP reading during the measurement~~				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				~~year. If there are multiple BPs on the same date of service, use the lowest systolic and lowest diastolic BP on that date as the representative BP. An organization that uses CPT Category II codes to identify numerator compliance for this indicator must search for all codes and use the most recent codes during the measurement year~~				

The following table presents the detailed specifications for the proposed consensus standards. All information presented has been derived directly from measures developers without modification or alteration (except where measure developers agreed to such modifications) and is current as of June 01, 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; Bridges to Excellence; Yale University; Brandeis University; the Agency for Healthcare Research and Quality; the National Committee for Quality Assurance; the Centers for Medicare and Medicaid Services (CMS); The Society of Thoracic Surgeons; the American College of Surgeons; 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
				~~to evaluate whether the member is numerator compliant for both systolic and diastolic levels.~~				
OT1-030-09	Proportion of patients hospitalized with AMI that have a potentially avoidable complication (during the index stay or in the 30-day post-discharge	Bridges To Excellence	Percent of adult population aged 18-65 years who were admitted to a hospital with acute myocardial infarction (AMI), were followed for one month after discharge, and had one or more potentially avoidable complications	Outcome: Potentially avoidable complications (PACs) in patients hospitalized for AMI occurring during the index stay or in the 30-day post-discharge period. The time window starts with a	Adult patients aged 18-65 years who had a relevant hospitalization for AMI (with no exclusions) and were followed for one month after discharge. The time window starts with a hospitalization for	Denominator exclusions include exclusions of either “patients” or “claims” based on the following criteria: 1) “Patients” excluded are those that have any form of	Electronic adminstrative data/claims, Pharmacy data A two-year, national commercially insured population (CIP) claims database was used as our	Clinicians: group, health plan, Population: national, Population: regional/network. Population: states, Population: counties or cities

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
	period)		(PACs). PACs may occur during the index stay or during the 30-day post-discharge period. We define PACs during each time period as one of three types: A) PACs During the Index Stay (Hospitalization): 1) PACs related to the index condition: The index stay is regarded as having a PAC if during the index	hospitalization for AMI and continues for one month after discharge. Details: Patients that had an index hospitalization for AMI, and were identified as having services for potentially avoidable complications (PACs) either during the index hospitalization or within one month after discharge from the index	AMI and continues for one month after discharge. Details: Please refer to the enclosed excel workbook entitled NQF_AMI_all_codes_1.22.10. The target population should have the following criteria: 1. Have an index hospitalization with a trigger code as defined in the AMI TRIGGERS tab 2. The patient	cancer, ESRD (end-stage renal disease), transplants such as lung or heart-lung transplant or complications related to transplants, pregnancy and delivery, HIV, or suicide. 2) "Claims" are excluded from the AMI measure if they are considered not relevant to AMI care or are for major	development al database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The database was an administrativ e claims database with medical as well as pharmacy claims. The methodology	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			hospitalization the patient develops one or more complications such as cardiac arrest, ventricular fibrillation, cardiogenic shock, stroke, coma, acute post-hemorrhagic anemia, etc. that may result directly due to AMI or its management. 2) PACs due to comorbidities: The index stay is also regarded as having a PAC if	hospitalization. The enclosed excel workbook entitled NQF_AMI_all_codes_01.22.10 gives the detailed codes for PACs. Services for PACs are identified as followed: a. In the EXPND AMI TRGS tab, claims with ICD-9 diagnosis codes, ICD-9 procedure codes or CPT codes marked with an assignment PAC in column B. b. In	should have continuous enrollment for the entire time window with no enrollment gaps with the entity providing the data (so we can ensure that the database has captured all the claims for the patient in the time window). 3. Do not have an exclusion code. Exclusion codes are defined in the same fashion as in the Denominator Exclusion section.	surgical services that suggest that AMI may be a comorbidity associated with the procedure, e.g., CABG procedure. Patients where the index hospitalization claim is excluded are automatically excluded from both the numerator and the denominator. Details:	can be used on any claims database with at least two years of data and a minimum of 150 patients with the index condition or hospitalization. Having pharmacy data adds to the richness of the risk-adjustment models. A	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			one or more of the patient's controlled comorbid conditions is exacerbated during the hospitalization (i.e., it was not present on admission). Examples of these PACs are diabetic emergency with hypo- or hyperglycemia, tracheostomy, mechanical ventilation, pneumonia, lung complications	the medical tab, claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in column E (labeled PAC) c. In the proc tab, claims with either ICD-9 procedure codes or CPT codes that map to one of the CCS procedure categories identified as a "1" in column D (labeled PAC) d. In the Pharm tab,		Denominator exclusions include exclusions of "patients" as well as "claims" not relevant to AMI care. Patients where the index hospitalization claim is excluded are automatically excluded from both the numerator and the denominator. Please refer to the enclosed	standardized SAS-based program has been developed that users could download from the website to calculate PAC rates using their own data. The methodology has been tested on databases of several health plans	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			gastritis, ulcer, GI hemorrhage, etc. 3) PACs suggesting patient safety failures: The index stay is regarded as having a PAC if there are one or more complications related to patient safety issues. Examples of these PACs are septicemia, meningitis, other infections, phlebitis, deep vein thrombosis, pulmonary	pharmacy claims that map to a category identified as a PAC in the AMI action descr column These claims are included as PACs only if the PAC is NOT present on admission AND the claims are considered as relevant to AMI. Relevant claims are defined as claims that: a. Have a "filter code" on the claim - see tab		excel workbook entitled NQF_AMI_all_ codes_1.22.10. 1. "Patients" are excluded from the AMI measures if they meet one of the following criteria: a. If age is < 18 years or >= 65 years b. If gender is missing c. If they do not have continuous enrollment for the entire time window with the entity	as well as on a few employer databases.	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			embolism, or any of the CMS-defined hospital acquired conditions (HACs). B) PACs During the 30-Day Post-Discharge Period: 1) PACs related to the index condition: Readmissions and emergency room visits during the 30-day post-discharge period after an AMI are considered as PACs if they are	entitled "EXPND AMI TRGS" - all codes with an assignment as typical or PAC in the enclosed worksheet are filter codes. One of these codes needs to be present on a claim to be included as relevant to the episode, AND b. Do not have an exclusion code. Exclusion codes for numerator are defined in the same fashion as in the Denominator		providing the data (this helps determine if the database has captured all the claims for the patient in the time window). d. During the index hospitalization, patients have an in-hospital death or leave against medical advice. e. The index hospital stay cost is an outlier (less than $50 or greater than $ 1		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			for angina, chest pain, another AMI, stroke, coma, heart failure, etc. 2) PACs due to comorbidities: Readmissions and emergency room visits during the 30-day post-discharge period are also considered PACs if they are due to an exacerbation of one or more of the patient's comorbid conditions, such as a diabetic	Exclusion section. For the CCS category mapping to ICD-9 diagnosis codes see tab named CCSDX (This gives the AHRQ Clinical Classification System to categorize ICD-9 diagnosis codes into AHRQ diagnosis categories) For the CCS category mapping to ICD-9 procedure codes see tab named CCSPX (This		million). f. In the EXPND AMI TRGS tab, patients that have claims with ICD-9 diagnosis codes marked with an assignment Terminate in column B. g. In the medical tab, patients with claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in column C		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			emergency with hypo- or hyperglycemia, pneumonia, lung complications, tracheostomy, mechanical ventilation, etc. 3) PACs suggesting patient safety failures: Readmissions or emergency room visits during the 30-day post-discharge period are considered PACs if they are due to sepsis, infections, phlebitis, deep	gives the AHRQ Clinical Classification System to categorize ICD-9 procedure codes into AHRQ procedure categories) For the CCS category mapping to CPT codes see tab named CCSCPT ((This gives the AHRQ Clinical Classification System to categorize CPT codes into the same AHRQ procedure		labeled Irrelevant_cases . h. The total episode cost is an outlier (for medical claims total costs are less that $20 or greater than $1 million; and for pharmacy claims, total costs are greater than $1 million). 2. "Claims" are excluded from the AMI measure if they meet one of the following		

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			vein thrombosis, or for any of the CMS-defined hospital acquired conditions (HACs). The information is based on a two-year, national, commercially insured population (CIP) claims database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The	categories as for ICD-9 codes)		criteria: a. In the medical tab, claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in column D labeled Irrelevant_claims. b. In the proc tab, claims with either ICD-9 procedure codes or CPT codes that map to one of the CCS procedure categories		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			database was an administrative claims database with medical as well as pharmacy claims..			identified as a "1" in column C labeled Irrelevant_ claims. c. In the Pharm tab, pharmacy claims that map to a category identified as a delete in the AMI action descr column For the CCS category mapping to ICD-9 diagnosis codes see tab named CCSDX (This gives the AHRQ Clinical		

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						Classification System to categorize ICD-9 diagnosis codes into AHRQ diagnosis categories) For the CCS category mapping to ICD-9 procedure codes see tab named CCSPX (This gives the AHRQ Clinical Classification System to categorize ICD-9 procedure		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						codes into AHRQ procedure categories) For the CCS category mapping to CPT codes see tab named CCSCPT ((This gives the AHRQ Clinical Classification System to categorize CPT codes into the same AHRQ procedure categories as for ICD-9 codes) Risk-		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						Adjustment Conceptual Model: Variations in outcomes across populations may be due to patient-related factors or due to provider-controlled factors. When we adjust for patient-related factors, the remaining variance in PACs is due to factors that could be		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						controlled by all providers that are managing or co-managing the patient, both during and after hospitalization. We have developed a "severity index" based on patient-related factors such as patient demographics and comorbidities. The severity-adjusted PAC rates give		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						a fair comparison of PAC rates from population to population and help providers determine the degree of PACs that are not related to patient-level factors but due to factors that they could control and thus result in fewer PACs being incurred by patients and paid for by payers.		

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, SECOND REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT
APPENDIX A: MEASURE SPECIFICATIONS

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						Methodology Overview: A severity index is calculated for each patient based on the risk-adjustment model for professional and other services that determines the cost drivers for typical care for a given condition. Demographic variables, comorbid conditions, various types of		

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						services as well as different patient-level pharmacy indicators are fed into the model. Conditions and services that lead to higher costs and increased resource consumption are weighted more heavily in our model. For example, use of intracoronary thrombolytics or stents in the		

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						setting of AMI, are associated with higher coefficients in the model. The model determines the patient-level factors that are drivers for increased financial risk. For each patient the "predicted" log coefficients from the severity adjustment model are summed to give the patient-level		

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						severity-index. Adjusting the overall PAC rates by the severity index for the population helps adjust for variations in outcomes related to severity. The risk-adjustment variables that were included were patient demographic factors such as age and gender, medical		

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						comorbidities, procedures performed, as well as pharmacy variables. Variable Descriptions: AGE CONTINUOUS VARIABLE GENDER FEMALE (MALE IS REFERENCE) BACL1 ANTICOAGULANTS EDIAB ANTIDIABETICS GIACD ANTACIDS		

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						AND ANTISPASMODICS HACEI ACEI, ARB, ANTI-RENIN DRUGS HBBLK BETA-BLOCKERS HCLBK CALCIUM CHANNEL BLOCKING AGENTS HNITR NITRATES AND OTHER ANTIANGINALS HOTHR OTHER CARDIOVASCULAR		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						AGENTS HPLT ANTIPLATELET AGENTS, THROMBIN INHIBITORS HSTN STATINS AND OTHER ANTI-LIPID AGENTS HVSDL VASODILATORS LDECG DECONGESTANTS AND ANTIHISTAMINICS LOTHR INHALERS AND RESPIRATOR		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						Y AGENTS M10 DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS M12 ESSENTIAL HYPERTENSION M14 HEART VALVE AND CONGENITAL HEART DISORDERS M18 DISEASES OF ARTERIES ARTERIOLES AND		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						CAPILLARIES M20 CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND BRONCHIECTASIS M21 ASTHMA M22 OTHER RESPIRATORY INFECTIONS AND DISEASES M23 ESOPHAGEAL DISORDERS M24 DISEASES OF THE		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						DIGESTIVE SYSTEM M27 DISEASES OF THE GENITOURINARY SYSTEM M29 DISEASES OF THE SKIN AND CONNECTIVE TISSUE M3 THYROID DISORDERS M35 DISEASES OF BONES, JOINTS, SPINE M36 PREVENTATIVE,		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						REHABILITATION AND AFTER CARE M37 NAUSEA, VOMITING, MALAISE, FATIGUE, FEVER M4 DIABETES MELLITUS WITHOUT COMPLICATION M5 FLUID AND ELECTROLYTE DISTURBANCES M6 OTHER ENDOCRINE, NUTRITIONAL AND		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						METABOLIC DISEASES AND IMMUNITY DISORDERS M7 DISORDERS OF LIPID METABOLISM M8 ANEMIA, COAGULATION, HEMORRHAGIC DISORDERS M9 MENTAL AND BEHAVIORAL ILLNESS MIRF1 INITIAL		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						EPISODE OF AMI MIRF10 HEART FAILURE, CARDIOMYOPATHY, CARDIOMEGALY, HYPERTENSIVE HEART MIRF14 OBESITY, SLEEP APNEA MIRF15 INTRA-AORTIC BALLOON PUMP MIRF2 UNSPECIFIED EPISODE OF		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						AMI MIRF3 SUBSEQUENT CARE FOR AMI MIRF4 SUBENDOCARDIAL INFARCT MIRF5 CARDIAC CATHETERIZATION, ANGIOGRAPHY MIRF6 PTCA, STENT, INTRACORONARY THROMBOLYTICS MIRF7 PACEMAKER, AICD IMPLANTATI		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						ON MIRF8 ELECTROPHYSIOLOGICAL STUDIES, CRYOABLATION, CARDIOVERSION MIRF9 CARDIAC ARRTHYTHMIAS AND CONDUCTION DISORDERS NDEPR ANTIDEPRESSANTS NSEDT SEDATIVES AND HYPNOTICS P13 RESPIRATOR		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						Y DIAGNOSTIC AND MINOR THERAPEUTIC PROCEDURES P14 NERVOUS SYSTEM, ENDOCRINE, HEAD AND NECK MINOR PROCEDURES P23 RADIOLOGY AND RADIONUCLEAR DIAGNOSTIC SERVICES P26 PHYSICAL THERAPY		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						AND REHABILITATION P27 ANCILLARY, HOME HEALTH, TRANSPORT P28 MEDICATION ADMINISTRATION P31 DME, VISUAL AND HEARING AIDS P4 INVASIVE VASCULAR DIAGNOSTIC & MINOR THERAPEUTI		

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						C PROCEDURES The risk adjustment variables and their prevalence in our population are listed in the enclosed workbook entitled NQF_AMI_Risk-Adjustment_2.16.10.xls – see tabs CIP_RiskFactors. The output of the regression model are given		

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						in the same workbook in the tab CIP_Prof_Risk-Adj Model. The details of the codes that map to the risk-adjustment variables are given in the excel workbook entitled NQF_AMI_all_codes_1.22.10.xls		

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, SECOND REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT
APPENDIX A: MEASURE SPECIFICATIONS

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
OT1-031-09	Proportion of patients hospitalized with stroke that have a potentially avoidable complication (during the index stay or in the 30-day post-discharge period)	Bridges To Excellence	Percent of adult population aged 18-65 years who were admitted to a hospital with stroke, were followed for one month after discharge, and had one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 30-day post-discharge period). We define PACs during each time	Outcome: Potentially avoidable complications (PACs) in patients hospitalized for stroke occurring during the index stay or in the 30-day post-discharge period. The time window starts with a hospitalization for stroke and continues for one month after discharge. Details: Patients that had an index	Adult patients aged 18-65 years who had a relevant hospitalization for stroke (with no exclusions) and were followed for one month after discharge. The time window starts with a hospitalization for stroke and continues for one month after discharge. Details: Please refer to the	Denominator exclusions include exclusions of either “patients” or “claims” based on the following criteria: 1) “Patients” excluded are those that have any form of cancer, ESRD (end-stage renal disease), transplants such as lung or heart-lung transplant or	Electronic adminstrative data/claims, Pharmacy data A two-year, national, commercially insured population (CIP) claims database was used as our developmental database. The database had 4.7 million covered lives and $95	Clinicians: Group, Health Plan, Population: national, Population: regional/network, Facility/Agency

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			period as one of three types: A) PACs During the Index Stay (Hospitalization): 1) PACs related to the index condition: The index stay is regarded as having a PAC if during the index hospitalization for stroke the patient develops one or more complications such as hypertensive encephalopathy,	hospitalization for stroke, and were identified as having services for potentially avoidable complications (PACs) either during the index hospitalization or within one month after discharge from the index hospitalization. The enclosed excel workbook entitled NQF_Stroke_all_codes_1.22.10 gives the detailed codes for PACs.	enclosed excel workbook entitled NQF_Stroke_all_codes_1.22.10. The target population should have the following criteria: 1. Have an index hospitalization with a trigger code as defined in the Stroke TRIGGERS tab 2. The patient should have continuous enrollment for the entire time window with no enrollment gaps	complications related to transplants, intracranial trauma, pregnancy and delivery, HIV, or suicide. 2) "Claims" are excluded from the stroke measure if they are considered not relevant to stroke care or are for major surgical services that suggest that stroke may be a comorbidity or complication	billion in "allowed amounts" for claims costs. The database was an administrative claims database with medical as well as pharmacy claims. The methodology can be used on any claims database with at least two years of data and a	

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			malignant hypertension, coma, anoxic brain damage, or respiratory failure, etc. that may result directly from stroke or its management. 2) PACs due to comorbidities: The index stay is also regarded as having a PAC if one or more of the patient's controlled comorbid conditions is exacerbated	Services for PACs are identified as follows: a. In the EXPND Stroke TRGS tab, claims with ICD-9 diagnosis codes, ICD-9 procedure codes or CPT codes marked with an assignment PAC in column B. b. In the medical tab, claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in column E	with the entity providing the data (so we can ensure that the database has captured all the claims for the patient in the time window). 3. Do not have an exclusion code. Exclusion codes are defined in the same fashion as in the Denominator Exclusion section.	associated with the procedure, e.g., CABG procedure. Patients where the index hospitalization claim is excluded are automatically excluded from both the numerator and the denominator. Details: Denominator exclusions include exclusions of "patients" as	minimum of 150 patients with the index condition or hospitalizatio n. Having pharmacy data adds to the richness of the risk-adjustment models. A standardized SAS-based program has been developed that users could	

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			during the hospitalization (i.e., it was not present on admission). Examples of these PACs are diabetic emergency with hypo- or hyperglycemia, pneumonia, lung complications, acute myocardial infarction, gastritis, ulcer, GI hemorrhage, etc. 3) PACs suggesting patient safety failures: The index stay is regarded as	(labeled Stroke PAC) c. In the proc tab, claims with either ICD-9 procedure codes or CPT codes that map to one of the CCS procedure categories identified as a "1" in column D (labeled Stroke PAC) d. In the Pharm tab, pharmacy claims that map to a category identified as a PAC in the Stroke Action Descr column These		well as "claims" not relevant to stroke care. Patients where the index hospitalization claim is excluded are automatically excluded from both the numerator and the denominator. Please refer to the enclosed excel workbook entitled NQF_Stroke_all_codes_1.22.10. 1. "Patients" are	download from the website to calculate PAC rates using their own data. The methodology has been tested on databases of several health plans as well as on a few employer databases.	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			having a PAC if there are one or more complications related to patient safety issues. Examples of these PACs are septicemia, meningitis, other infections, phlebitis, deep vein thrombosis, pulmonary embolism, or any of the CMS-defined hospital acquired conditions (HACs).	claims are included as PACs only if the PAC is NOT present on admission AND the claims are considered as relevant to Stroke. Relevant claims are defined as claims that: a. Have a "filter code" on the claim - see tab entitled "EXPND Stroke TRGS" - all codes with an assignment as typical or PAC in the enclosed worksheet are		excluded from the stroke measures if they meet one of the following criteria: a. If age is < 18 years or >= 65 years b. If gender is missing c. If they do not have continuous enrollment for the entire time window with no enrollment gaps with the entity providing the data (so we can ensure that the database has		

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			B) PACs During the 30-Day Post-Discharge Period: 1) PACs related to the index condition: Readmissions and emergency room visits during the 30-day post-discharge period after a stroke are considered as PACs if they are for hypertensive encephalopathy, malignant hypertension, respiratory failure, coma, anoxic brain	filter codes. One of these codes needs to be present on a claim to be included as relevant to the episode, AND b. Do not have an exclusion code. Exclusion codes for numerator are defined in the same fashion as in the Denominator Exclusion section. For the CCS category mapping to ICD-9 diagnosis codes see tab named CCSDX (This		captured all the claims for the patient in the time window). d. During the index hospitalization, patients have an in-hospital death or leave against medical advice. e. The index hospital stay cost is an outlier (less than $50 or greater than $ 1 million). f. Patients that have claims with ICD-9		

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			damage, etc. 2) PACs due to comorbidities: Readmissions and emergency room visits during the 30-day post-discharge period are also considered PACs if they are due to an exacerbation of one or more of the patient's comorbid conditions, such as a diabetic emergency with hypo- or hyperglycemia, pneumonia, lung	gives the AHRQ Clinical Classification System to categorize ICD-9 diagnosis codes into AHRQ diagnosis categories) For the CCS category mapping to ICD-9 procedure codes see tab named CCSPX (This gives the AHRQ Clinical Classification System to categorize ICD-9 procedure codes into AHRQ		diagnosis codes marked with an assignment "Termination" in column B in the EXPND Stroke TRGS tab. g. Patients with claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in column C labeled "Stroke Irrelevant cases (Terminate)" in the medical tab.		

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			complications, acute myocardial infarction, acute renal failure, etc. 3) PACs suggesting patient safety failures: Readmissions or emergency room visits during the 30-day post-discharge period are considered PACs if they are due to sepsis, infections, deep vein thrombosis, pulmonary embolism, or for any of the CMS-defined hospital	procedure categories) For the CCS category mapping to CPT codes see tab named CCSCPT ((This gives the AHRQ Clinical Classification System to categorize CPT codes into the same AHRQ procedure categories as for ICD-9 codes)		h. The total episode cost with all medical and pharmacy claims included for the episode time window is an outlier (less that $20 or greater than $2 million). 2. "Claims" are excluded from the stroke measure if they meet one of the following criteria: a. In the medical tab, claims with ICD-9 diagnosis		

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			acquired conditions (HACs). The information is based on a two-year, national, commercially insured population (CIP) claims database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The database was an administrative claims database			codes that map to one of the CCS diagnosis categories identified as a "1" in column D labeled "Stroke Irrelevant claims (exclude)" b. In the proc tab, claims with either ICD-9 procedure codes or CPT codes that map to one of the CCS procedure categories identified as a "1" in column C		

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			with medical as well as pharmacy claims. The two tabs demonstrate the most common PACs that occurred in patients hospitalized with stroke.			labeled "Stroke Irrelevant claims (Exclude)" c. In the Pharm tab, pharmacy claims that map to a category identified as a delete in the "Stroke Action Descr" column For the CCS category mapping to ICD-9 diagnosis codes see tab named CCSDX (This gives the AHRQ Clinical Classification		

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						System to categorize ICD-9 diagnosis codes into AHRQ diagnosis categories) For the CCS category mapping to ICD-9 procedure codes see tab named CCSPX (This gives the AHRQ Clinical Classification System to categorize ICD-9 procedure codes into		

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						AHRQ procedure categories) For the CCS category mapping to CPT codes see tab named CCSCPT ((This gives the AHRQ Clinical Classification System to categorize CPT codes into the same AHRQ procedure categories as for ICD-9 codes) Risk-Adjustment:		

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						Risk-adjustment devised specifically for this measure/ condition Conceptual Model: Variations in outcomes across populations may be due to patient-related factors or due to provider-controlled factors. When we adjust for patient-related factors, the		

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						remaining variance in PACs is due to factors that could be controlled by all providers that are managing or co-managing the patient, both during and after the hospitalization. We have developed a "severity index" based on patient-related factors such as patient demographics		

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						and comorbidities. The severity-adjusted PAC counts give a fair comparison of PACs and PAC rates from population to population and help providers determine the degree of PACs that are not related to patient-level factors but due to factors that they could control and thus result in fewer		

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						PACs being incurred by patients and paid for by payers. Methodology Overview: A severity index is calculated for each patient based on the risk-adjustment model for professional and other services that determines the cost drivers for typical care for a given condition.		

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						Demographic variables, comorbid conditions, various types of services as well as different patient-level pharmacy indicators are fed into the model. Conditions and services that lead to higher costs and increased resource consumption are weighted more		

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						heavily in our model. For example, DME use is associated with a higher coefficient in the model. The model determines the patient-level factors that are drivers for increased financial risk. For each patient the "predicted" log coefficients from the severity-adjustment model are		

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						summed to give the patient-level severity index. Summing the patient-level severity index helps derive the population-level severity index. Adjusting the overall PAC rates by the severity-index for the population helps adjust for variations in outcomes related to severity.		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
OT2-002-09	Risk adjusted colorectal surgery outcome measure	American College of surgeons	This is a hospital-based, risk-adjusted, case mix-adjusted, morbidity and mortality composite outcome measure of adults 18+ years undergoing colorectal surgery.	The outcome of interest is hospital-specific, risk-adjusted mortality, a return to the operating room, or any of the following morbidities as defined by American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP): Cardiac arrest requiring CPR, myocardial infarction, DVT requiring therapy,	Patients undergoing any ACS NSQIP listed (primary CPT) colorectal surgical procedure. (44140, 44141, 44143, 44144, 44145, 44146, 44147, 44150, 44151, 44155, 44156, 44157, 44158, 44160, 44204, 44205, 44206, 44207, 44208, 44210, 44211, 44212, 45110, 45111, 45112, 45113,	Adjustments: From 271,368 patient records in the 2008 ACS NSQIP data file, 21,694 acceptable records from 211 hospitals (mean/hospital = 103) were analyzed. Records were excluded either because of missing values for critical variables or because the primary CPT code could not	Electronic Health/ Medical Records, Electronic clinical data, paper medical record/ flowsheet.	Facility/ Agency

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				sepsis, septic shock, deep incisional SSI, organ/space SSI, wound disruption, unplanned reintubation without prior ventilator dependence, pneumonia without pre-operative pneumonia, pulmonary embolism, progressive renal insufficiency or acute renal failure without pre-operative renal	45114, 45116, 45119, 45120, 45121, 45123, 45126, 45130, 45135, 45160, 45395, 45397, 45402, 45550) Notes: following codes are not included in this denominator list: 44152 (not found), 44153 (not found), 44239 (not found), 45540 (proctopexy without resection), 45499 (unlisted	be categorized into 1 of the 136 pre-established CPT "Groups." These categorizations have been defined and implemented for risk-adjustment in previously published research.* An outcome was defined as 30-day mortality or any serious morbidity including:		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				failure or dialysis, or UTI within 30 days of any ACS NSQIP listed (CPT) surgical procedure. Targeted events within 30 days of the operation are included. Details: Mortality- "All cause" Death within 30 day follow-up period: Any death occurring through midnight on the 30th day after the date of the	laparoscopy, rectum). Time Window: Data are derived from a systematic sample collected over a one year period constructed to as to meet sample size requirements specified for the measure. Details: Cases are collected so as to match ACS NSQIP inclusion and exclusion criteria, thereby	cardiac arrest requiring CPR, myocardial infarction, DVT requiring therapy, sepsis, septic shock, organ space SSI, deep incisional SSI, wound disruption, unplanned reintubation without prior ventilator dependence, pneumonia without pre-operative pneumonia,		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				procedure, regardless of cause, in or out of the hospital. All other outcome fields also defined explicitly in the tradition of ACS NSQIP: Return to the Operating Room within Thirty Days after the Assessed Procedure: Return to the operating room includes all major surgical procedures that required the patient to be taken	permitting valid application of ACS NSQIP model-based risk adjustment. See also exclusions	pulmonary embolism, progressive renal insufficiency or acute renal failure without pre-operative renal failure or dialysis, urinary tract infection, or return to the operating room, according to ACS NSQIP definitions. Of the 21,694 patients, 4,862 (22.4%) experienced death or a		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				to the surgical operating room for intervention of any kind. "Major surgical procedures" are defined as those cases in any and all surgical subspecialties that meet Program criteria for inclusion. Cardiac Arrest Requiring CPR: The absence of cardiac rhythm or presence of chaotic cardiac rhythm that results in loss of		serious morbidity event. CPT Group was originally considered a categorical variable but, to maintain methodological consistency with other proposed measures, CPT Group was converted to continuous risk variable. This was accomplished by making the categorical		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				consciousness requiring the initiation of any component of basic and/or advanced cardiac life support. Patients with automatic implantable cardioverter defibrillator (AICD) that fire but the patient has no loss of consciousness should be excluded. Myocardial Infarction: An acute myocardial		Group variable a single predictor for mortality/morbidity and invoking the Firth penalized likelihood method in the logistic modeling software (SAS PROC LOGISTIC). The patient-based predicted log odds from this model was then used as a continuous predictor in		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				infarction occurring within 30 days following surgery as manifested by one of the following three criteria: a. Documentation of ECG changes indicative of acute MI(one or more of the following): • ST elevation > 1 mm in two or more contiguous leads • New left bundle branch • New q-wave in two of more contiguous leads b. New elevation		subsequent logistic models, which also included the standard predictors. Step-wise logistic regression (P < 0.05 for inclusion), which selected from a total of 26 NSQIP predictors, identified 20 predictors for inclusion in the model. In order of inclusion		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				in troponin greater than 3 times upper level of the reference range in the setting of suspected myocardial ischemia c. Physician diagnosis of myocardial infarction. Deep Vein Thrombosis (DVT)/Requiring Therapy: The identification of a new blood clot or thrombus within the venous system, which		these variables were: ASA Class, pre-operative Functional Status, Indication, Log Odds CPT Group, Emergent, Wound Class, Dyspnea, Weight Loss, Steroid Use, Smoking, Disseminated Cancer, History of COPD, Ascites, Hypertension, Ventilator		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				may be coupled with inflammation. This diagnosis is confirmed by a duplex, venogram or CT scan. The patient must be treated with anticoagulation therapy and/or placement of a vena cava filter or clipping of the vena cava. Sepsis: Sepsis is the systemic response to infection. Report this variable if the patient has TWO		Dependent, Age Group, Radio Therapy, Alcohol Use, Bleeding Disorder, and Previous Vascular Event/Disease. The c-statistic was 0.738 and the Hosmer-Lemeshow was 0.043. Because of the very large sample sizes studied here, a statistically significant Hosmer-Lemeshow		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				OR MORE of the following five clinical signs and symptoms of Systemic Inflammatory Response Syndrome (SIRS): a. Temp >38 degrees C (100.4 degrees F) or < 36 degrees C (96.8 degrees F) b. HR >90 bpm c. RR >20 breaths/min or PaCO2 <32 mmHg(<4.3 kPa) d. WBC >12,000 cell/mm3, <4000 cells/mm3, or		statistic is not considered informative with respect to calibration. Using only the first six selected variables (ASA Class, pre-operative Functional Status, Indication, Log Odds CPT Group, Emergent, and Wound Class), the c-statistic was 0.727 and the Hosmer-		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				>10% immature (band) forms e. Anion gap acidosis: this is defined by either: • [Na + K] – [Cl + HCO3 (or serum CO2)]. If this number is greater than 16, then an anion gap acidosis is present. • Na – [Cl + HCO3 (or serum CO2)]. If this number is greater than 12, then an anion gap acidosis is present. AND one of the following TWO:		Lemeshow was 0.177). The use of these six predictors for modeling was further evaluated. Using a 95% confidence interval for the ratio of observed to expected events (O/E), this six-variable logistic model identified 16 statistical outliers (10 low outliers and 6 high outliers). When the same		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				a. positive blood culture b. clinical documentation of purulence or positive culture from any site thought to be causative Severe Sepsis/Septic Shock: Sepsis is considered severe when it is associated with organ and/or circulatory dysfunction. Report this variable if the patient has sepsis AND documented organ and/or		six variables were used in a random intercept, fixed slope, hierarchical model (SAS PROC GLIMMIX) using only the fixed portion of the prediction equation (NOBLUP option), 17 outliers were detected (11 low outliers and 6 high outliers). Thus, using a 95% confidence		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				circulatory dysfunction. Examples of organ dysfunction include: oliguria, acute alteration in mental status, acute respiratory distress. Examples of circulatory dysfunction include: hypotension, requirement of inotropic or vasopressor agents. Severe Sepsis/Septic Shock is assigned when it appears to		interval, logistic and hierarchical models identified 3% of hospitals as high outliers. When the logistic model parameters were applied to an independent validation data set (the 2007 data file composed of 18,098 patients) after coding CPT Groups with log odds derived from the original one-		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				be related to Sepsis and not a Cardiogenic or Hypovolemic etiology. Deep Incisional SSI: Deep Incision SSI is an infection that occurs within 30 days after the operation and the infection appears to be related to the operation and infection involved deep soft tissues (for example, fascial and muscle layers) of the incision and at least one of the		variable model on 2008 data, the c-statistic was essentially unchanged (c-statistic = 0.721). A GEE (generalized estimating equations) approach (SAS PROC GENMOD) with compound symmetry was used to estimate the intraclass correlation (ICC), which is		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				following: Purulent drainage from the deep incision but not from the organ/space component of the surgical site; A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever (> 38 C), localized pain, or tenderness, unless		reported in GENMOD as the exchangeable working correlation. The ICC was 0.010562. The relationship between sample size, the ICC, and reliability is defined as: N = R /[ICC(1 – R)] – R / (1 –-- R), where N is the required number of patients per hospital and R is reliability. Based on the		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				site is culture-negative; An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination; Diagnosis of a deep incision SSI by a surgeon or attending physician. Organ/Space SSI: Organ/Space SSI		estimated ICC, patients per hospital to achieve reliability levels of 0.3, 0.4, 0.5, 0.6, and 0.7 are 41, 63, 94, 141, and 219, respectively. For the table detailing risk factors, odds ratios, and parameters for the logistic model, please see attachment (Parsimonious Model for		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				is an infection that occurs within 30 days after the operation and the infection appears to be related to the operation and the infection involves any part of the anatomy (for example, organs or spaces), other than the incision, which was opened or manipulated during an operation and at least one of the following: Purulent drainage		Colorectal.doc). For initial year(s) of measure use, ACS NSQIP data-derived model parameters will be used to construct risk-adjusted O/E ratios for participating hospitals. Once data from measure-participating hospitals are substantial, models will be		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				from a drain that is placed through a stab wound into the organ/space; Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space; An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or		derived from that data. *References utilizing CPT groups Exclusions: As noted above, cases are collected so as to match ACS NSQIP inclusion and exclusion criteria, thereby permitting valid application of ACS NSQIP model-based risk adjustment.		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				radiologic examination; Diagnosis of an organ/space SSI by a surgeon or attending physician. Wound Disruption: Separation of the layers of a surgical wound, which may be partial or complete, with disruption of the fascia. Unplanned Intubation for Respiratory/Cardiac Failure		Therefore, trauma and transplant surgeries are excluded as are surgeries not on the ACS NSQIP CPT list as eligible for selection (see details in next item). Patients who are ASA 6 (brain-death organ donor) are not eligible surgical cases. Of note, the measure excludes patients		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				(without preoperative ventilator dependent): Patient required placement of an endotracheal tube and mechanical or assisted ventilation because of the onset of respiratory or cardiac failure manifested by severe respiratory distress, hypoxia, hypercarbia, or respiratory acidosis. In patients who were		identified as having had prior surgical procedures within 30 days of a potential index procedure, since this measure is based on 30 day outcomes. A patient who is identified as having had a prior surgical procedure within 30 days of the index case being considered is excluded from		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				intubated for their surgery, unplanned intubation occurs after they have been extubated after surgery. In patients who were not intubated during surgery, intubation at any time after their surgery is considered unplanned. Pneumonia (without preoperative pneumonia): if the patient has pneumonia		accrual. A patient who has a second surgical procedure performed within 30 days after an index procedure has the second procedure recorded as a "Return to the operating room within 30 days" (one of the outcomes defined), but the second procedure cannot be		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				meeting the definition below AND pneumonia was not present preoperatively. Patients with pneumonia must meet criteria from both Radiology and Signs/Symptoms/ Laboratory sections listed as follows: Radiology: One definitive chest radiological exam (x-ray or CT) with at least one of the following: New or		accrued into the program as a new index procedure. Details: A patient who is admitted to the hospital with acute trauma and has surgery for that trauma is excluded though any operation performed after the patient has been discharged from the trauma stay can be included. A		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				progressive and persistent infiltrate, Consolidation or opacity, Cavitation. In patients with underlying pulmonary or cardiac disease (e.g. respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary edema, or chronic obstructive pulmonary disease), two or more serial chest		patient who is admitted to the hospital for a transplant and has a transplant procedure and any additional surgical procedures during the transplant hospitalization will be excluded, though any operation performed after the patient has been discharged from the transplant stay		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				radiological exams (x-ray or CT) are required. Signs/Symptoms/ Laboratory FOR ANY PATIENT, at least one of the following three: a. Fever (>38 degrees C or >100.4 degrees F) with no other recognized cause b. Leukopenia (<4000 WBC/mm3) or leukocytosis(=12, 000 WBC/mm3) c. For adults = 70 years old, altered mental status with		is eligible for selection. Donor procedures on living donors are not excluded unless meeting other exclusion criteria. If surgeries do not appear in the list of ACS NSQIP CPT codes, they are not eligible for selection. A patient classified as ASA Class 6 is not eligible for inclusion. As noted above, the measure		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				no other recognized cause AND At least one of the following four: a. 5% Bronchoalveolar lavage (BAL) - obtained cells contain intracellular bacteria on direct microscopic exam (e.g., Gram stain) b. Positive growth in blood culture not related to another source of infection c. Positive growth in culture of pleural fluid d. Positive		excludes patients identified as having had prior surgical procedures within 30 days of a potential index procedure, since this measure is based on 30 day outcomes. A patient who is identified as having had a prior surgical procedure within 30 days of the index case being		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				quantitative culture from minimally contaminated lower respiratory tract (LRT) specimen (e.g. BAL or protected specimen brushing) OR At least two of the following four: a. New onset of purulent sputum, or change in character of sputum, or increased respiratory secretions, or increased		considered is excluded from accrual. A patient who has a second surgical procedure performed within 30 days after an index procedure has the second procedure recorded as a "Return to the operating room within 30 days" (one of the outcomes defined), but the second		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				suctioning requirements b. New onset or worsening cough, or dyspnea, or tachypnea c. Rales or bronchial breath sounds d. Worsening gas exchange (e.g. O2 desaturations (e.g., PaO2/FiO2 = 240), increased oxygen requirements, or increased ventilator demand) Pulmonary Embolism: Lodging of a		procedure cannot be accrued into the program as a new index procedure.		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				blood clot in a pulmonary artery with subsequent obstruction of blood supply to the lung parenchyma. The blood clots usually originate from the deep leg veins or the pelvic venous system. Pulmonary embolism is recorded if the patient has a V-Q scan interpreted as high probability of pulmonary embolism or a				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				positive CT spiral exam, pulmonary arteriogram or CT angiogram. Treatment usually consists of: Initiation of anticoagulation therapy, Placement of mechanical interruption (for example Greenfield Filter), for patients in whom anticoagulation is contraindicated or already instituted. Progressive Renal Insufficiency				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				(without preoperative renal failure or dialysis): The reduced capacity of the kidney to perform its function as evidenced by a rise in creatinine of >2 mg/dl from preoperative value, but with no requirement for dialysis. Acute Renal Failure Requiring Dialysis (without preoperative renal failure or dialysis): In a				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				patient who did not require dialysis preoperatively, worsening of renal dysfunction postoperatively requiring hemodialysis, peritoneal dialysis, hemofiltration, hemodiafiltration, or ultrafiltration. Urinary Tract Infection: Postoperative symptomatic urinary tract infection must meet ONE of the				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				following TWO criteria: Criterion One: One of the following five: a. fever (>38 degrees C), b. urgency, c. frequency, d. dysuria, e. suprapubic tenderness AND a urine culture of > 100,000 colonies/ml urine with no more than two species of organisms. OR Criterion Two: Two of the following five:				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				a. fever (>38 degrees C), b. urgency, c. frequency, d. dysuria, e. suprapubic tenderness AND ANY ONE or MORE of the following seven: f. Dipstick test positive for leukocyte esterase and/or nitrate, g. Pyuria (>10 WBCs/mm3 or > 3 WBC/hpf of unspun urine), h. Organisms seen on Gram stain of unspun urine, i.				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				Two urine cultures with repeated isolation of the same uropathogen with >100 colonies/ml urine in non-voided specimen, j. Urine culture with < 100,000 colonies/ml urine of single uropathogen in patient being treated with appropriate antimicrobial therapy, k. Physician's diagnosis, l. Physician				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				institutes appropriate antimicrobial therapy.				
OT2-005-09	30-day post-hospital PNA (Pneumonia) 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 PNA for three types of events: readmissions, ED visits, and evaluation and management (E&M) services.	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	The composite measure is the weighted of three individual measures. Thus, the denominator is one.	N/A	Electronic adminstrative data/claims	Population: national

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			These events are relatively common, measurable using readily 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	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 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 on not				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			under the Patient Outcomes Measures Phase II project's Call for Measures. Each of these 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	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. Time Window: Each of the individual measures in the composite is computed annually, as a				

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			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.	three year rolling average. Details: The details on each individual measure comprising the component measure are provided in their submission for NQF approval.				
OT2-013-09	Proportion of patients hospitalized with pneumonia that have a potentially avoidable	Bridges To Excellence	Percent of adult population aged 18-65 years who were admitted to a hospital with pneumonia, were followed for one month after	Outcome: Potentially avoidable complications (PACs) in patients hospitalized for pneumonia occurring during	Adult patients aged 18-65 years who had a relevant hospitalization for pneumonia (with no exclusions) and were	Denominator exclusions include exclusions of either “patients” or “claims” based on the following	Electronic adminstrative data/claims, Pharmacy data A two-year, national,	Clinicians: Group, Health Plan, Population: national, Population: regional/net

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
	complication (during the index stay or in the 30-day post-discharge period)		discharge, and had one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 30-day post-discharge period. We define PACs during each time period as one of three types: A) PACs During the Index Stay (Hospitalization): 1) PACs related	the index stay or in the 30-day post-discharge period. The time window starts with a hospitalization for pneumonia and continues for one month after discharge. Details: Patients that had an index hospitalization for pneumonia, and were identified as having services for potentially avoidable	followed for one month after discharge. The time window starts with a hospitalization for pneumonia and continues for one month after discharge. Details: Please refer to the enclosed excel workbook entitled NQF_Pneumomia_all_codes_1 22 10. The target population should have the	criteria: 1) "Patients" excluded are those that have any form of cancer (especially cancer of lung and bronchus), thalassemia, sickle-cell disease, ESRD (end-stage renal disease), transplants such as lung or heart-lung transplant or complications related to	commercially insured population (CIP) claims database was used as our developmental database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The database was an administrative claims	work, Population: states, Population: counties or cities

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			to the index condition: The index stay is regarded as having a PAC if during the index hospitalization the patient develops one or more of the avoidable complications that can result from pneumonia, such as respiratory failure, respiratory insufficiency, pneumothorax, pulmonary collapse, or	complications (PACs) either during the index hospitalization or within one month after discharge from the index hospitalization. The enclosed excel workbook entitled NQF_Pneumonia _all_codes_1 22 10 gives the detailed codes for PACs. Services for PACs are identified as follows: a. In the EXPND Pneumonia TRGS	following criteria: 1. Have an index hospitalization with a trigger code as defined in the Pneumonia TRIGGERS tab 2. The patient should have continuous enrollment for the entire time window with no enrollment gaps with the entity providing the data (so we can ensure that the database has captured all the claims for the patient in the time	transplants, pregnancy and delivery, HIV, or suicide. 2) “Claims” are excluded from the pneumonia measure if they are considered not relevant to pneumonia care or are for major surgical services that suggest that pneumonia may be a comorbidity associated with the procedure,	database with medical as well as pharmacy claims. The methodology can be used on any claims database with at least two years of data and a minimum of 150 patients with the index condition or hospitalizatio n. Having pharmacy	

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			requires respiratory intubation and mechanical ventilation, incision of pleura, thoracocentesis, chest drainage, tracheostomy, etc. 2) PACs due to comorbidities: The index stay is also regarded as having a PAC if one or more of the patient's controlled comorbid conditions is exacerbated during the	tab, claims with ICD-9 diagnosis codes, ICD-9 procedure codes or CPT codes marked with an assignment PAC in column B. b. In the medical tab, claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in column E (labeled Pneumonia PAC) c. In the proc tab, claims with either ICD-9 procedure	window). 3. Do not have an exclusion code. Exclusion codes are defined in the same fashion as in the Denominator Exclusion section.	e.g., CABG procedure. Patients where the index hospitalization claim is excluded are automatically excluded from both the numerator and the denominator. Details: Denominator exclusions include exclusions of "patients" as well as "claims"	data adds to the richness of the risk-adjustment models. A standardized SAS-based program has been developed that users could download from the website to calculate PAC rates using their own data. The	

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			hospitalization (i.e., it was not present on admission). Examples of these PACs are diabetic emergency with hypo- or hyperglycemia, stroke, coma, gastritis, ulcer, GI hemorrhage, acute renal failure, etc. 3) PACs suggesting patient safety failures: The index stay is regarded as having a PAC if there is one or more	codes or CPT codes that map to one of the CCS procedure categories identified as a "1" in column D (labeled Pneumonia PAC) d. In the Pharm tab, pharmacy claims that map to a category identified as a PAC in the Pneum action descr column These claims are included as PACs only if the PAC is NOT present on		not relevant to pneumonia care. Patients where the index hospitalization claim is excluded are automatically excluded from both the numerator and the denominator. Please refer to the enclosed excel workbook entitled NQF_Pneumonia_all_codes_122 10. 1. "Patients" are	methodology has been tested on databases of several health plans as well as on a few employer databases.	

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			complication related to patient safety issues. Examples of these PACs are infections, sepsis, phlebitis, deep vein thrombosis, pulmonary embolism, or any of the CMS-defined hospital acquired conditions (HACs). B) PACs During the 30-Day Post-Discharge Period: 1) PACs related	admission AND the claims are considered as relevant to Pneumonia. Relevant claims are defined as claims that: a. Have a "filter code" on the claim - see tab entitled "EXPND Pneumonia TRGS" - all codes with an assignment as typical or PAC in the enclosed worksheet are filter codes. One of these codes		excluded from the Pneumonia measures if they meet one of the following criteria: a. If age is < 18 years or >= 65 years b. If gender is missing c. If they do not have continuous enrollment for the entire time window with no enrollment gaps with the entity providing the data (so we can ensure that the database has		

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			to the index condition: Readmissions and emergency room visits during the 30-day post-discharge period are considered PACs if they are for potentially avoidable complications of pneumonia such as respiratory failure, respiratory insufficiency, pneumonia, respiratory intubation,	needs to be present on a claim to be included as relevant to the episode, AND b. Do not have an exclusion code. Exclusion codes for numerator are defined in the same fashion as in the Denominator Exclusion section. For the CCS category mapping to ICD-9 diagnosis codes see tab named CCSDX (This gives the AHRQ Clinical		captured all the claims for the patient in the time window). d. During the index hospitalization, patients do not have an in-hospital death or do not leave against medical advice. e. The index hospital stay cost is not an outlier (less than $50 or greater than $ 1 million). f. In the EXPND Pneumonia		

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			mechanical ventilation, etc. 2) PACs due to comorbidities: Readmissions and emergency room visits during the 30-day post-discharge period are also considered PACs if they are due to an exacerbation of one or more of the patient's comorbid conditions, such as a diabetic emergency with hypo- or hyperglycemia,	Classification System to categorize ICD-9 diagnosis codes into AHRQ diagnosis categories) For the CCS category mapping to ICD-9 procedure codes see tab named CCSPX (This gives the AHRQ Clinical Classification System to categorize ICD-9 procedure codes into AHRQ procedure categories) For		TRGS tab, patients that have claims with ICD-9 diagnosis codes marked with an assignment Terminate in column B. g. In the medical tab, patients with claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in column C labeled Pneumonia		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			stroke, coma, gastritis, ulcer, GI hemorrhage, acute renal failure, etc. 3) PACs suggesting patient safety failures: Readmissions or emergency room visits during the 30-day post-discharge period are considered PACs if they are due to sepsis, infections, phlebitis, deep vein thrombosis, or for any of the CMS-defined hospital acquired	the CCS category mapping to CPT codes see tab named CCSCPT ((This gives the AHRQ Clinical Classification System to categorize CPT codes into the same AHRQ procedure categories as for ICD-9 codes)		Irrelevant cases (Terminate). h. The total episode cost is not an outlier (for medical claims total costs are not less that $20 or greater than $1 million; and for pharmacy claims, total costs are not greater than $1 million). 2. "Claims" are excluded from the Pneumonia measures if they meet one of the		

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			conditions (HACs). The information is based on a two-year, national, commercially insured population (CIP) claims database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The database was an administrative claims database with medical as			following criteria: a. In the medical tab, claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in column D labeled Pneumonia Irrelevant claims (exclude) b. In the proc tab, claims with either ICD-9 procedure codes or CPT codes that map to one		

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			well as pharmacy claims.			of the CCS procedure categories identified as a "1" in column C labeled Pneumonia Irrelevant claims c. In the Pharm tab, pharmacy claims that map to a category identified as a delete in the Pneumonia action descr column For the CCS category mapping to ICD-9 diagnosis		

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						codes see tab named CCSDX (This gives the AHRQ Clinical Classification System to categorize ICD-9 diagnosis codes into AHRQ diagnosis categories) For the CCS category mapping to ICD-9 procedure codes see tab named CCSPX (This gives the AHRQ Clinical		

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						Classification System to categorize ICD-9 procedure codes into AHRQ procedure categories) For the CCS category mapping to CPT codes see tab named CCSCPT ((This gives the AHRQ Clinical Classification System to categorize CPT codes into the same AHRQ procedure		

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						categories as for ICD-9 codes) Risk-Adjustment Conceptual Model: Variations in outcomes across populations may be due to patient-related factors or due to provider-controlled factors. When we adjust for patient-related factors, the remaining variance in		

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						PACs is due to factors that could be controlled by all providers that are managing or co-managing the patient, both during and after the hospitalization.. We have developed a "severity index" based on patient-related factors such as patient demographics		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						and comorbidities. The severity-adjusted PAC counts give a fair comparison of PACs and PAC rates from population to population and help providers determine the degree of PACs that are not related to patient-level factors but are due to factors that they can control and thus result in fewer		

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						PACs being incurred by patients and paid for by payers. Methodology Overview: A severity index is calculated for each patient based on the risk-adjustment model for professional and other services that determines the cost drivers for typical care for a given condition.		

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						Demographic variables, comorbid conditions, various types of services as well as different patient-level pharmacy indicators are fed into the model. Conditions and services that lead to higher costs and increased resource consumption are weighted more		

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						heavily in our model. For example, DME use is associated with a higher coefficient in the model. The model determines the patient-level factors that are drivers for increased financial risk. For each patient the "predicted" log coefficients from the severity-adjustment model are		

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						summed to give the patient-level severity index. The risk-adjustment variables that were included were patient demographic factors such as age and gender, medical comorbidities, procedures performed, as well as pharmacy variables. Variable Descriptions : AGE		

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						CONTINUOUS VARIABLE BACL1 ANTICOAGULANTS EDIAB ANTIDIABETICS ESTER STEROIDS GENDER 1=M 0=F GIEM ANTIEMETICS HACEI ACEI, ARB, ANTI-RENIN DRUGS HBBLK BETA-BLOCKERS HCLBK CALCIUM CHANNEL BLOCKING		

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						AGENTS HDIUR DIURETICS HNITR NITRATES AND OTHER ANTIANGINA LS HOTHR OTHER CARDIOVASC ULAR AGENTS HPLT ANTIPLATEL ET AGENTS, THROMBIN INHIBITORS HVSDL VASODILATO RS IANTB ANTIBIOTICS		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						LBDIL BRONCHODILATORS AND OTHER ANTIASTHMATICS LDECG DECONGESTANTS AND ANTIHISTAMINICS LOTHR INHALERS AND RESPIRATORY AGENTS M1TB, MYCOSES, OTHER INFECTIOUS AND PARASITIC		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						DISEASES M10 DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS M12 ESSENTIAL HYPERTENSION M13 HYPERTENSION WITH COMPLICATIONS AND SECONDARY HYPERTENSION M14 HEART VALVE AND CONGENITAL		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						HEART DISORDERS M15 CORONARY ATHEROSCLEROSIS AND OTHER HEART DISEASE M16 CHF, CARDITIS, CARDIOMYOPATHY M18 DISEASES OF ARTERIES ARTERIOLES AND CAPILLARIES M20 CHRONIC OBSTRUCTIVE		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						PULMONARY DISEASE AND BRONCHIECTASIS M21 ASTHMA M22 OTHER RESPIRATORY INFECTIONS AND DISEASES M23 ESOPHAGEAL DISORDERS M24 DISEASES OF THE DIGESTIVE SYSTEM M26 CHRONIC RENAL		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						FAILURE AND OTHER KIDNEY DISEASE M29 DISEASES OF THE SKIN AND CONNECTIVE TISSUE M3 THYROID DISORDERS M32 CARDIAC DYSRHYTHMIAS M35 DISEASES OF BONES, JOINTS, SPINE M36 PREVENTATIVE, REHABILITAT		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						ION AND AFTER CARE M37 NAUSEA, VOMITING, MALAISE, FATIGUE, FEVER M4 DIABETES MELLITUS WITHOUT COMPLICATION M5 FLUID AND ELECTROLYTE DISTURBANCES M6 OTHER ENDOCRINE, NUTRITIONAL AND METABOLIC		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						DISEASES AND IMMUNITY DISORDERS M7 DISORDERS OF LIPID METABOLISM M8 ANEMIA, COAGULATION, HEMORRHAGIC DISORDERS M9 MENTAL AND BEHAVIORAL ILLNESS NSEDT SEDATIVES AND		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						HYPNOTICS P14 NERVOUS SYSTEM, ENDOCRINE, HEAD AND NECK MINOR PROCEDURES P15 GI DIAGNOSTIC AND MINOR THERAPEUTIC PROCEDURES P23 RADIOLOGY AND RADIONUCLEAR DIAGNOSTIC SERVICES P27 ANCILLARY,		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						HOME HEALTH, TRANSPORT P28 MEDICATION ADMINISTRATION P31 DME, VISUAL AND HEARING AIDS P35 BRONCHOSCOPY, MEDIASTINOSCOPY P36 CT SCAN AND OTHER RESPIRATORY DIAGNOSTIC PROCEDURES		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						P6 NON-INVASIVE CARDIOVASCULAR PROCEDURES PNRF10 OBESITY, SLEEP APNEA PNRF11 OTHER RESPIRATORY SYMPTOMS, SUPPL O2 PNRF12 PNEUMONIA: SALMONELLA, POST VIRAL, TB, FUNGAL, OTHER PNRF2		

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						STREPT, PNEUMOCOCCAL, H.INFLUENZAE, OTHER SPECIFIED PNEUMONIAE PNRF3 MYCOPLASMA, CHLAMYDIA, BRONCHOPNEUMONIA PNRF5 STAPH, MRSA, GRAM NEG & ANAEROBIC PNEUMONIA PNRF6 ACUTE RESPIRATOR		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						Y INFECTIONS PNRF7 ACUTE EXACERBATION OF COPD, ASTHMA PNRF8 PLEURAL EFFUSION PNRF9 TOBACCO USE SMKS SMOKING CESSATION AGENTS ZNUTR IRON AND OTHER NUTRITIONAL SUPPLEMENTS The risk		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						adjustment variables and their prevalence in our population are listed in the enclosed workbook entitled NQF Pneumonia PACs Risk Adjustment 2.16.10.xls – see tabs CIP_Risk Factors. The output of the regression model are given in the same workbook in the		

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						tab CIP_Prof_Risk_adj Model. The details of the codes that map to the risk-adjustment variables are given in the excel workbook entitled NQF_Pneumonia_all_codes_122 10.xls		
OT2-022-09	Proportion of patients with a chronic condition that have a potentially	Bridges To Excellence	Percent of adult population aged 18-65 years who were identified as having at least one of the following six	Outcome: Potentially avoidable complications (PACs) in patients having one of six chronic	Adult patients aged 18-65 years who had a trigger code for one of the six chronic conditions: Diabetes Mellitus	Denominator exclusions include exclusions of either “patients” or “claims” based on the	Electronic administrative data / claims, Pharmacy data	Health Plan, Clinicians: group, Population: national, Population:

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
	avoidable complicati-on during a calendar year.		chronic conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma, were followed for one year, and had one or more potentially avoidable complications (PACs). A	conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma, during the episode time window of one calendar year (or 12 consecutive months). The time window starts with a	(DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma (with no exclusions), and were followed for one year from the trigger code. The time window starts with a professional claim that carries a	following criteria: 1) "Patients" excluded are those who have any form of cancer, ESRD (end-stage renal disease), transplants such as lung or heart-lung transplant or complications related to transplants, pregnancy and delivery, HIV, or suicide. 2) "Patients" are	A two-year, national, commercially insured population (CIP) claims database was used as our developmental database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The database was an	regional / network

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			potentially avoidable complication is any event that negatively impacts the patient and is potentially controllable by the physicians and hospitals that manage and co-manage the patient. Generally, any hospitalization related to the patient's core chronic condition or any comorbidity is	professional claim that carries a trigger code for one of the six chronic care conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma, and continues for a period of one year (12 months) from	trigger code for one of the six chronic care conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma, and continues for a period of one year from the trigger code.	also excluded if they have case-breaker situations such as cardiac arrest, shock, coma or brain damage. 3)"Claims" are excluded from the chronic care measure if they are not considered relevant to the care for the chronic condition, such as trauma-related claims; or are for major	administrative claims database with medical as well as pharmacy claims. The methodology can be used on any claims database with at least two years of data and a minimum of 150 patients with the index condition. Having	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			considered a potentially avoidable complication, unless that hospitalization is considered to be a typical service for a patient with that condition. Additional PACs that can occur during the calendar year include those related to emergency room visits, as well as other professional or ancillary services tied to a	the trigger code. Details: Patients that had a trigger for one of the six chronic conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma, and were identified as having services	Details: Please refer to the enclosed excel workbook entitled NQF_Chronic_Care_All_Codes_2.9.10. The target population should have the following criteria: 1. Patients that had a trigger for one of the six chronic conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD),	surgical services that suggest that the chronic condition should be a comorbidity associated with the procedure, e.g., CABG procedure or hip replacement surgery, etc. 4) Additionally, the episode does not start until there is a stable trigger claim. For patients where the initial trigger code is on a hospital	pharmacy data adds to the richness of the risk-adjustment models. A standardized SAS-based program has been developed that users could download from our website (www.prometheuspayment.org) to calculate	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			potentially avoidable complication. We define PAC hospitalizations and PAC professional and other services as one of three types: A) PAC-Related Hospitalizations: 1) Hospitalizations related to the index condition: Hospitalizations due to acute exacerbations of	for potentially avoidable complications (PACs) either due to hospitalizations, emergency room visits or related professional services during the one-calendar year (12 months) from the trigger code. The enclosed excel workbook entitled NQF_Chronic_Care_All_Codes_2.9.10 gives the detailed codes for PACs. Services	Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma, and were followed up for a one-year from the trigger code (see tab entitled "Triggers" in the enclosed workbook). 2. The trigger claim should not be an inpatient stay claim 3. The trigger claim should not have one of the acute	claim, or if the initial trigger claim has a trigger exclusion code (suggesting that the patient is unstable at the time of trigger), the episode is triggered only when a stable trigger claim is identified. Claims relevant to the chronic condition but prior to the trigger claim are therefore	PAC rates using their own data. The methodology has been tested on databases of several health plans as well as on a few employer databases.	

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			the index condition are considered PACs. For example, a hospitalization for a diabetic emergency in a diabetic patient, or a hospitalization for an acute pulmonary edema in a CHF patient. Note that for patients with CAD, many hospitalizations are part of typical care and are not considered PACs. 2)	for PACs are identified as follows: (1) All hospitalizations and emergency room visits related to care of one of the chronic care conditions are considered PACs except in CAD, where some hospitalizations and ER visits are considered part of typical care. (2) There are six “Expanded triggers” tabs for each of the six	exacerbation codes as identified in the “Triggers” tab labeled as "trigger exclusions" 4. The patient should have continuous enrollment for the one year from the trigger code with a maximum of 30-day continuous enrollment gap with the entity providing the data (so we can ensure that the database has captured most	excluded from the measure. This gives the physicians the benefit of being measured on patients who are stable at the time the episode period (12 months) is triggered. Details: Denominator exclusions include exclusions of "patients" as well as "claims" not relevant to		

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			Hospitalizations due to comorbidities: Hospitalizations due to any of the patient's comorbid conditions are considered PACs. For example, a diabetic emergency or pneumonia hospitalization for a patient with heart failure. Note that hospitalizations for a major surgical procedure (such	chronic conditions identified above (i.e., Diabetes Expnd_trgs, CHF Expnd_trgs, CAD Expnd_trgs, HTN Expnd_trgs, COPD Expnd_trgs, Asthma Expnd_trgs). In each of the Expnd Trgs tab, PAC assignments are given in column A for ICD-9 diagnosis codes, ICD-9 procedure codes as well as CPT codes. (3) In	of the claims for the patient in the time window). 5. Does not have an exclusion code. Exclusion codes are defined in the Denominator Exclusion section.	the care of any of the six chronic conditions being studied, namely Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma. Please refer to the enclosed		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			as joint replacement, CABG, etc.) are not counted as PACs. 3) Hospitalizations suggesting patient safety failures: Hospitalizations for major infections, deep vein thrombosis, adverse drug events, and other patient safety-related events are considered PACs. B) Other PACs During the	the Medical tab, ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in columns labeled PAC. There are six columns for each of the six chronic conditions. (4) In the Procedural tab, ICD-9 procedure codes or CPT codes that map to one of the CCS procedure categories identified as a "1"		excel workbook entitled NQF_Chronic_Care_All_Codes_2.9.10. 1. "Patients" are excluded from the chronic care measures if they meet one of the following criteria: a. If age is < 18 years or > = 65 years b. If gender is missing c. If they do not have continuous enrollment for the entire one-year time		

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			Calendar Year Studied: 1) PACs related to the index condition: Emergency room visits, professional and ancillary services related to the index condition are considered PACs if they are due to an acute exacerbation of the index condition such as acute exacerbation of COPD in patients with lung disease,	in columns labeled PAC. There are six columns for each of the six chronic conditions. (5) In the Pharm tab, pharmacy codes that map to a category 2 with an assignment PAC. There are six columns for each of the six chronic conditions. Claims are only included as PACs if they are considered as relevant to the		window from the trigger claim with a maximum of 30-day continuous enrollment gap with the entity providing the data (so we can ensure that the database has captured all the claims for the patient in the time window). d. If patient had an in-hospital death or leave against medical advice. e.		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			or acute heart failure in patients with CHF. 2) PACs due to comorbidities: Emergency room visits, professional and ancillary services are considered PACs if they are due to an exacerbation of one or more of the patient's comorbid conditions, such as an acute exacerbation of COPD or acute heart failure in	anchor chronic condition. Relevant claims are defined as claims that: a. Have a "filter code" on the claim – in the tabs entitled "Expnd Trgs" - all codes with an assignment as typical or PAC are filter codes. One of these codes needs to be present on a claim to be included as relevant to the episode, AND b. Do not have an		Patients that have claims with ICD-9 diagnosis codes, ICD-9 procedure codes or CPT codes marked with an assignment "Termination" in column A in the Expnd trgs tab of the chronic condition under study (e.g. CHF Expnd trgs for CHF episode). f. Patients with claims with ICD-9 diagnosis		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			patients with diabetes. 3) PACs suggesting patient safety failures: Emergency room visits, professional and ancillary services for major infections, deep vein thrombosis, adverse drug events, and other patient safety-related events are considered PACs. The information is based on a two-year, national,	exclusion code. Exclusion codes for numerator are defined in the same fashion as in the Denominator Exclusion section. For the CCS category mapping to ICD-9 diagnosis codes see tab named CCSDX (This gives the AHRQ Clinical Classification System to categorize ICD-9 diagnosis codes into AHRQ diagnosis		codes that map to one of the CCS diagnosis categories identified as a "1" in any of the six columns labeled "Irrelevant cases (exclude patient)" in the medical tab. g. The total episode cost with all medical and pharmacy claims included for the one-year time window is an outlier (less that $20 or		

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			commercially insured population (CIP), claims database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The database was an administrative claims database with medical as well as pharmacy claims. It is important to note that while the overall frequency of PAC	categories) For the CCS category mapping to ICD-9 procedure codes see tab named CCSPX (This gives the AHRQ Clinical Classification System to categorize ICD-9 procedure codes into AHRQ procedure categories) For the CCS category mapping to CPT codes see tab named CCSCPT ((This gives the AHRQ Clinical		greater than $2 million). 2. "Claims" are excluded from the chronic care measure if they meet one of the following criteria: a. Claims that do not have a "filter" code for the chronic condition under study are considered irrelevant to that episode and are excluded. All codes with an assignment of		

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			hospitalizations is low (for all chronic care conditions summed together, PAC frequency was 6.32% of all PAC occurrences), they amount to more than 58% of the PAC medical costs.	Classification System to categorize CPT codes into the same AHRQ procedure categories as for ICD-9 codes)		Typical or PAC in each of the "Expnd Trgs" tab are filter codes for that chronic condition. b. Claims with ICD-9 diagnosis codes that map to one of the CCS diagnosis categories identified as a "1" in any of the columns labeled “Irrelevant claims (exclude claim)” in the medical tab. c. Claims with		

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						either ICD-9 procedure codes or CPT codes that map to one of the CCS procedure categories identified as a "1" in any of the columns labeled “Irrelevant claims (exclude claim)” in the procedural tab. d. In the Pharm tab, pharmacy codes that map to a category 3 with an assignment delete. There		

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						are six columns for each of the six chronic conditions. For the CCS category mapping to ICD-9 diagnosis codes see tab named CCSDX (This gives the AHRQ Clinical Classification System to categorize ICD-9 diagnosis codes into AHRQ diagnosis categories) For the CCS		

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						category mapping to ICD-9 procedure codes see tab named CCSPX (This gives the AHRQ Clinical Classification System to categorize ICD-9 procedure codes into AHRQ procedure categories) For the CCS category mapping to CPT codes see tab named CCSCPT		

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						((This gives the AHRQ Clinical Classification System to categorize CPT codes into the same AHRQ procedure categories as for ICD-9 codes) Risk-Adjustment Conceptual Model: Variations in outcomes across populations may be due to patient-related factors or due to		

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						provider-controlled factors. When we adjust for patient-related factors, the remaining variance in PAC rates is due to factors that could be controlled by all providers that are managing or co-managing the patient, during the entire episode time window. We have		

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						developed a severity index based on patient-related factors, such as patient demographics and comorbidities. The severity-adjusted PAC counts give a fair comparison of PAC rates from population to population and help providers determine the degree of PACs that are not		

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						related to patient-level factors but due to factors that they could control. Methodology Overview A severity index is calculated for each patient based on the risk-adjustment model for professional and other services that determines the cost drivers for typical care for a given		

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
						condition. Demographic variables, comorbid conditions, various types of services as well as patient-level pharmacy indicators are fed into the model. Conditions and services that lead to higher costs and increased resource consumption are weighted more heavily in our		

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						model. The model determines the patient-level factors that are drivers for increased financial risk. For example, DME use is associated with a high coefficient in the diabetes model. For each patient the "predicted" log coefficients from the severity adjustment		

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						model are summed to give the patient-level severity index. Summing the patient-level severity indices helps derive the population-level severity index. Adjusting the overall PAC rates by the severity index for the population helps adjust for variations in outcomes related to severity.		

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, SECOND REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT
APPENDIX A: MEASURE SPECIFICATIONS

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						There were six separate risk-adjustment models created for the six chronic conditions under study, namely: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary		

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						Disease (COPD) or Asthma (with no exclusions). The risk-adjustment variables that were included were patient demographic factors such as age and gender, medical comorbidities, procedures performed, as well as pharmacy variables. Some of the risk factor variables were		

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						condition specific, e.g., for diabetes, the type of diabetes and whether or not it was controlled were separate risk factors that were fed into the model.		

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

Appendix B—Main Steering Committee

Joyce Dubow, MUP (Co-Chair)

AARP, Washington, DC

Lee Fleisher, MD (Co-Chair)

University of Pennsylvania, Philadelphia, PA

Ruben Amarasingham, MD, MBA

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

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

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

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

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NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, SECOND 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