- 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 multiphase 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 reevaluate 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.

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

DRAFT REPORT FOR VOTING

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

3 EXECUTIVE SUMMARY

4 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 5 6 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 7 8 care. There are a variety of types of outcome measures such as health or functional status, 9 physiologic measurements, adverse outcomes, patient experience with care, and morbidity and 10 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 11 episodes of care, additional measures of patient outcomes are needed to fill gaps in the current 12 portfolio. 13

14 This second report of NQF's Patient Outcomes project presents the results of the evaluation of

15 27 candidate measures considered under NQF's Consensus Development Process (CDP).

16 <u>NineTen</u> measures are recommended for endorsement as voluntary consensus standards suitable

17 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)

28	•	Proportion of pneumonia patients that have a potentially avoidable complication (during
29		the index stay or in the 30-day post-discharge period) (BTE)
30	•	30-day post-hospital PNA (pneumonia) discharge care transition composite measure
31		(Center for Medicare and Medicaid Services and Brandeis University)
32	٠	Risk adjusted colorectal surgery outcomes measure (American College of Surgeons
33		[ACS])
34	•	Risk-adjusted case-mix-adjusted elderly outcomes measure (ACS)
35		

36 NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES, 37 SECOND REPORT FOR PHASES 1 AND 2: A CONSENSUS REPORT

38 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 44 populations that are attributed to healthcare."¹ Outcome measures also provide an integrative 45 assessment of quality reflective of multiple care processes across the continuum of care. There 46 are a variety of types of outcome measures. Some represent an end result such as mortality or 47 function; others are considered intermediate outcomes (e.g., physiological or biochemical values 48 49 such as blood pressure or LDL cholesterol) that precede and may lead to a longer-range endresult outcome. Sometimes proxies are used to indicate an outcome (e.g., hospital readmission 50 indicates deterioration in health status since discharge). To date the National Quality Forum 51 (NQF) has endorsed more than 200 outcome measures in a variety of topic areas (Appendix C). 52 53 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. 54

55 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://

63 <u>www.qualityforum.org/projects/Patient_Outcome_Measures_Phases1-2.aspx</u>.

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

66 **DRIVE TOWARD HIGH PERFORMANCE.** Over time, the bar of performance expectations should be raised to encourage the achievement of higher levels of system performance. 67 68 **EMPHASIZE COMPOSITES.** Composite measures provide much-needed summary information pertaining to multiple dimensions of performance and are more comprehensible to 69 70 patients and consumers. 71 **MOVE TOWARD OUTCOME MEASUREMENT.** Outcome measures provide information 72 of keen interest to consumers and purchasers, and when coupled with healthcare process 73 measures, they provide useful and actionable information to providers. Outcome measures also 74 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 75 76 the part of many providers. **CONSIDER DISPARITIES IN ALL WE DO.** Some of the greatest performance gaps relate to 77 care of minority populations. Particular attention should be focused on identifying disparities-78 sensitive performance measures and on identifying the most relevant race/ethnicity/language 79

80 strata for reporting purposes.

81

82 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,
- 87 population health,
- **88** safety,
- 89 care coordination,

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

92 NQF'S CONSENSUS DEVELOPMENT PROCESS (CDP)

93 Patient Outcomes Project

NQF's *National Voluntary Consensus Standards for Patient Outcomes* project³ 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.
- 102 Additionally, the project will identify gaps in important outcome measures.

103 Scope of Patient Outcomes

The Steering Committee defined outcomes quite broadly to encompass a variety of types ofpatient 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.

115 Evaluating Potential Consensus Standards

116 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
- 119 Measures in September 2009 and actively sought through searches of the National Quality
- 120 Measures Clearinghouse, NQF Member websites, and an environmental scan. NQF staff
- 121 contacted potential measure stewards to encourage submission of measures for this project.
- 122 Despite active searching for measures, few or no measures were submitted for chronic kidney
- 123 disease, arthritis, eye care, bone and joint, and cancer. The candidate consensus standards were
- 124 evaluated for suitability as voluntary consensus standards for accountability and public reporting.
- 125 The measures were evaluated using NQF's standard evaluation criteria.⁴ Technical Advisory
- 126 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
- 128 making recommendations. The 24-member, multistakeholder Committee provided final
- 129 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
- 131 endorsement. The Committee evaluated the subcriteria for three cross-cutting measures that were
- 132 not evaluated by a TAP. Measure developers participated in the TAP and Committee discussions
- to respond to questions and clarify any issues or concerns.

134 Evaluating Composite Measures

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

142	component of a composite. Another important principle states that the methods for constructing a
143	composite should be explicitly stated and transparent so that the composite can be deconstructed.
144	
145	RECOMMENDATIONS FOR ENDORSEMENT
146	This report presents the results of the evaluation of 27 measures considered under NQF's CDP.
147	As a result of the Committee discussions, three measures were considered out of scope as
148	outcome measures, and two measures were withdrawn by the measure steward from further
149	consideration. Nine Ten measures are recommended for endorsement as voluntary consensus
150	standards suitable for public reporting and quality improvement.
151	
152	Candidate Consensus Standards Recommended for Endorsement
153	OT2-022-09: Proportion of patients with a chronic condition that have a potentially
154	avoidable complication during a calendar year (Bridges to Excellence [BTE]) Percent of
155	adult population aged 18-65 years who were identified as having at least one of the following six
156	chronic conditions: diabetes mellitus (DM), congestive heart failure (CHF), coronary artery
157	disease (CAD), hypertension (HTN), chronic obstructive pulmonary disease (COPD), or asthma,
158	were followed for one-year, and had one or more potentially avoidable complications (PACs).
159	The Committee was very supportive of this patient-centered measure that provides
160	understandable information about complications. The measure developer noted that this measure
161	was developed as a by-product of their work for the Prometheus episode payment $model^5$ and the
162	episode for chronic conditions is one year. When determining the appropriate care a patient
163	should receive during an episode, the developers created the concept of "potentially avoidable
164	complications" (PACs) - things that should not generally occur to patients. The PACs were
165	identified by an expert panel (convened by the measure developer) as three types: PACs
166	associated with the index condition, PACs associated with co-morbidities, and PACs associated
167	with a patient safety failure. The measure is a sum of all PACs occurring during the year as
168	determined by coding from administrative data. The developers advise that present on admission

- 169 conditions are not included in the PACs nor are patient factors that are considered risk factors.
- 170 To date the measure has been developed only in the commercial population for patients below 65
- 171 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
- 173 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.
- 176

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)

179 Percent of adult population aged 18-65 years who were admitted to a hospital with acute

180 myocardial infarction (AMI), were followed for one month after discharge, and had one or more

181 *potentially avoidable complications (PACs). PACs may occur during the index stay or during the*

- 182 *30-day post discharge period.*
- 183 This measure counts the PACs for 30 days after a primary discharge diagnosis of AMI. The

184 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
- 187 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
- 189 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
- 191 Committee recommended this measure because it is meaningful to patients and highlights
- 192 important adverse outcomes. <u>This measure is not appropriate for use at the individual clinician</u>
- 193 <u>level and should only be used at the group, plan, or system level of analysis.</u> The measure
- addresses the priority area of patient safety.
- 195

196 **OT1-031-09:** Proportion of stroke patients that have a potentially avoidable complication

197 (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 198 followed for one month after discharge, and had one or more potentially avoidable 199 200 complications (PACs). PACs may occur during the index stay or during the 30-day post 201 discharge period. Similar to measure #OT1-030-09, this measure counts the PACs for patients discharged with 202 stroke. The developer acknowledged that some PACs are not entirely preventable. The measure 203 developer's expert panel believed that while some complications might be preventable, all 204 complications were included because the goal is not to reach zero PACs but to reduce PACs 205 from current high levels. The Committee recommended the measure because it provides 206 207 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, 208 plan, or system level of analysis. The measure addresses the priority area of patient safety. 209 210 OT2-013-09: Proportion of pneumonia patients that have a potentially avoidable 211 complication (during the index stay or in the 30-day post-discharge period) (BTE) 212 213 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 214 215 complications (PACs). PACs may occur during the index stay or during the 30-day post discharge period. 216 217 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 218 219 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 220 221 and should only be used at the group, plan, or system level of analysis. The measure addresses the priority area of patient safety. 222 223 OT1-010-09): Acute myocardial infarction (AMI) mortality rate (Agency for Healthcare 224

225 Research & Quality [AHRQ])

- 226 Number of deaths per 100 discharges with a principal diagnosis code of acute myocardial227 infarction.
- 228 This measure provides a rate of in-hospital AMI mortality using administrative data. It was 229 compared to another endorsed in-hospital AMI mortality measure from The Joint Commission (161 AMI inpatient mortality). that is currently endorsed by NOF. The Joint Commission is no 230 longer reporting their in-hospital AMI mortality measure on their website in favor of CMS's 231 232 NQF-endorsed 230 AMI 30-day mortality measure. This candidate AMI mortality measure from AHRQ differs from measure 161those measures in that the risk-adjustment model is based on all 233 patient refined diagnosis related groups (APR DRGs), uses administrative coding rather than 234 manual medical record abstraction, and does include transfers into the facility. Reliability of the 235 coding was demonstrated to be 93-98 percent. The population measured is determined by the 236 principal diagnosis and the definition of AMI is harmonized with the endorsed 30-day AMI 237 mortality measure from CMS. The Committee considered the differences in the measures and the 238 benefits of having both inpatient and 30-day mortality measures. Unlike the 30-day mortality 239 measure which includes only patients aged > 65 years, this candidate standard measure includes 240 all patients experiencing AMI as a primary diagnosis. The inpatient measure is more feasible for 241 some implementers since tracking out of hospital deaths can be difficult. Members of the 242 Steering Committee also felt that knowing the proportion of in-hospital deaths was also 243 important as well as in addition to the 30-day mortality data and that the two measures are 244 245 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 246 247 currently. The developer clarified that most excluded patients experienced an AMI postoperatively and the Committee suggested that future measures should address this 248 249 population. 250 OT1-013-09: The STS CABG composite score (Society of Thoracic Surgeons [STS]) 251
- 252 This multidimensional performance measure is comprised of four domains consisting of 11
- 253 *individual NQF-endorsed cardiac surgery metrics: (1) operative care—use of the internal*
- 254 *mammary artery; (2) perioperative medical care (use of preoperative beta blockade; discharge*

255 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 256 257 postoperative stroke, renal failure, prolonged ventilation, re-exploration, or deep sternal wound infection—an "any-or-none" measure). 258 The STS database collects data from 90 percent of hospitals performing CABG surgery and 95 259 percent of all of the CABG surgeries performed in the United States. The Committee generally 260 261 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 262

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

270 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.

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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.

281

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

284	mechanisms are to be considered by NQF, appropriate evaluation criteria, testing, and standards
285	should be established.
286	
287	OT1-029-09: Diabetes composite (National Committee for Quality Assurance [NCQA])
288	The percentage of individuals 18-75 years of age with diabetes (type 1 and type 2) who had each
289	of the following:
290	• HbA1e poor control (>9.0 percent)*
291	HbA1c control (<8.0 percent)
292	HbAle control for a special population (<7.0 percent)
293	• Blood pressure control (≥140/90 mm Hg)*
294	• <u>Eye examination</u>
295	Smoking status and cessation advice or treatment
296	• $\frac{LDL \ control \ (\geq 130 \ mg/dL)}{}$
297	• <u>LDL control (<100 mg/dL)</u>
298	• Nephropathy assessment
299	This composite measure includes eight endorsed component measures which were recently
300	reviewed by the Diabetes TAP for their scheduled maintenance review. While the Committee did
301	not recommend endorsement of the measure #OT1-028-09 HbA1c control (<7.0 percent) as a
302	standalone measure as discussed later in this report, the Committee was supportive of all three
303	HbA1c control measures being used together to describe the complete picture of diabetes
304	management by a provider. The composite uses threshold cutoffs and weights to generate a
305	summary score out of a possible 100 points.
306	
307	OT2-005-09: 30-day post-hospital PNA (pneumonia) discharge care transition composite
308	measure (Brandeis University/Centers for Medicare & Medicaid Services [CMS])
309	This measure scores a hospital on the incidence among its patients during the month following
310	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.

312 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 313 Outcomes Phases 1 and 2. This composite measure combines the NQF-endorsed[®] 30-day 314 readmission measure for pneumonia and two new measures: 30-day ED visit measure and 30-315 day E&M service measure. All three component measures are risk-adjusted using the same risk-316 adjustment methodology as the previously recommended measures. The Committee rated the 317 measure very highly on importance, usability, and feasibility. The Committee evaluated the new 318 component measures and found them to be satisfactory as components for the composite 319 measure though not sufficiently usable as stand alone measures. The composite measure 320 addresses the priority area of care coordination. 321

322

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.

327 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)⁶ 328 where 270 hospitals participate. The measure has been specified for broader implementation by 329 hospitals who do not participate in NSQIP. The risk-adjustment model uses a parsimonious set 330 of clinical risk factors collected in the database. The sample size requirement of 65 cases per 331 year would capture only 40 percent to 50 percent of hospitals but would capture 85 percent of 332 colorectal surgery cases. Overall, the Steering Committee rated the measure highly though 333 334 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 335 commenters about the burden of data collection, the Committee acknowledged that there was 336 some the burden but believed felt it was offset by having good robust measures in this topic area. 337 The measure addresses the priority area of patient safety. 338

339

340 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.

343 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 344 model. The Committee supported the broad scope of the measure and clarified with the 345 developer that hip fractures from standing or walking would be included in the measure, though 346 a fracture from a fall or other major trauma would not be. Committee members suggested that a 347 separate measure for outcomes of hip fracture would fill a huge gap for the elderly population as 348 well as a similar measure for patients under the age of 65. As with the colorectal surgery 349 measure, Committee member highlighted the data abstraction burden and the need to conform to 350 the NSQIP methodology as challenges to feasibility for non-NSQIP hospitals. The Committee 351 acknowledged the burden with data collection but feltbelieved that the burden was offset by 352 having a good cross-cutting measure on outcomes. -This measure addresses the priority area of 353 patient safety. 354

- -

355

356 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])

359 *Percentage of patients without carotid territory neurologic or retinal symptoms within the 12*

360 months immediately preceding carotid endarterectomy (CEA) who experience stroke or death

361 following surgery while in the hospital. This measure is proposed for both hospitals and

individual surgeons. 362

363 Stroke and death are typical outcomes to assess in patients undergoing carotid endarterectomy

364 (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

366 patients which limits the window for capturing stroke complications and the lack of a

367 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

369	standardized assessment tool. Committee members also noted that the measure does not address
370	the appropriate use of carotid endarterectomy procedures, which may be another focus for
371	measurement. In addition, data were not provided by the measure developer on the reliability of
372	the results and the stroke diagnosis.
373	
374	OT1-012-09: Coronary artery bypass graft (CABG) procedure and postoperative stroke
375	during the hospitalization or within 7 days of discharge (Ingenix)
376	This measure identifies patients 20 years and older with a coronary artery bypass graft (CABG)
377	procedure who had a postoperative stroke (CVA) during the hospitalization or within seven days
378	of discharge.
379	NQF has previously endorsed a risk-adjusted, 30-day postoperative stroke morbidity measure for
380	CABG patients from STS. The Committee did not believe that this candidate measure provided
381	added value as it is not risk-adjusted and includes a shorter observation period. The
382	Cardiovascular TAP noted that strokes are more frequently identified by neurologists rather than
383	surgeons and that use of a stroke assessment tool would standardize capture of the data.
384	
385	OT1-028-09: HbA1c control for a selected population (National Committee for Quality
386	Assurance [NCQA])
387	Comprehensive diabetes care: The percentage of patients 18-65 years of age with either type I or
388	type II diabetes who had an HbA1c level of less than or equal to 7.0 percent.
389	This candidate standard is part of a group of process and outcome measures for diabetes, most of
390	which have been endorsed by NQF. This measure assesses a smaller population compared to the
391	other HbA1c control measures, focusing on younger patients without significant comorbidities.
392	The Diabetes/Metabolic TAP and Steering Committee members discussed the implications of the
393	recent published results of the ADVANCE ⁷ and ACCORD trials, ^{8,9} that suggested that very strict
394	control does not lead to better clinical outcomes and may be associated with significant side
395	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.
- 401

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

403 This measure estimates the percentage of Medicare beneficiaries age 65 years and older

404 *discharged from the hospital with the diagnosis of pneumonia (PNA) who had an emergency*

405 *department (ED) visit within 30 days of the hospital discharge and prior to any hospital*406 *readmission.*

407

408 OT2-004-09: 30-day post-hospital PNA discharge evaluation and management service visit 409 measure (Brandeis University/CMS)

- 410 This measure estimates the percentage of eligible Medicare hospital discharges with a diagnosis
- 411 *of pneumonia (PNA) for which beneficiaries receive an evaluation and management (E&M)*
- 412 service within 30 days of hospital discharge and prior to a hospital readmission or ED visit.
- 413 These two measures are included in the recommended pneumonia care transition composite
- 414 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
- 417 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
- 419 percent of the outliers.
- 420

421 OT2-008-09: Bariatric surgery and complications during the hospitalization or within 180

- 422 days of discharge (Ingenix)
- 423 This measure identifies patients 12 years and older with bariatric surgery who had a defined
- 424 *complication during hospitalization or within 180 days of discharge.*
- 425

426 OT2-012-09: Bariatric surgery and complications during the hospitalization or within 30

427 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 430 these measures. Committee members felt that patient risk was likely to vary based on degree of 431 432 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 433 stratifications for BMI (30-34.9; 35-39.9 and >40) by four types of procedure or by the number 434 of co-morbidities. The developer noted that only 55 percent of bariatric surgery cases include the 435 codes to capture BMI. Committee members felt that these measures need further development 436 and testing to determine the best methods to adjust for patient risk factors before they could be 437 considered for endorsement. 438

439

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

441 The Functional Assessment of Chronic Illness Therapy-Fatigue Scale (FACIT-F Scale) is a 13-

442 *item questionnaire that assesses self-reported fatigue and its impact upon daily activities and*

443 function. It was developed in 1994-1995 to meet a growing demand for the precise evaluation of

444 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

446 have included cancer patients receiving chemotherapy, cancer patients not receiving

447 chemotherapy, long term cancer survivors, childhood cancer survivors and several other clinical

448 samples including people with rheumatoid arthritis, multiple sclerosis, psoriasis, paroxysmal

449 nocturnal hemoglobinuria, and Parkinson's disease, as well as the general United States

450 population. In all cases, the FACIT-F Scale has been found to be reliable and valid. It has been

451 *validated for use in adults with chronic health conditions. There is also a validated modified*

452 version suitable with pediatric populations. It has been translated into over 60 non-English

453 *languages*.

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

- 455 *The Functional Assessment of Cancer Therapy-Lung (FACT-L) Scale is a 36-item self-report*
- 456 *instrument which measures multidimensional quality of life. It was developed from 1987-1993*
- 457 and was first published in 1995. The FACT-L meets a growing need for disease-specific health-
- 458 related quality of life (HRQOL) questionnaires that address the general and unique concerns of
- 459 *patients diagnosed with lung cancer. Subsequent to its development, it has been employed in*
- 460 over 20 papers from 15 unique data sets including over 2,500 people with lung cancer. Since
- 461 1995, studied groups have included cancer patients receiving chemotherapy, cancer patients
- 462 receiving radiotherapy, terminally-ill patients, and disease-free survivors. In all cases, the
- 463 *FACT-L* scale has been found to be reliable and valid. It has been validated with adult lung
- 464 *cancer patients and disease-free survivors.*

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

- 466 *The measurement system, under development since 1987, began with the creation of a generic*
- 467 *CORE questionnaire called the Functional Assessment of Cancer Therapy-General (FACT-G).*
- 468 *The FACT-G (now in Version 4) is a 27-item compilation of general questions divided into four*
- 469 primary QOL domains: physical well-being, social/family well-being, emotional well-being, and
- 470 *functional well-being. It is considered appropriate for use with patients with any form of cancer,*
- 471 and has also been used and validated in other chronic illness conditions (e.g., HIV/AIDS and
- 472 multiple sclerosis) and in the general population (using a slightly modified version). In the case
- 473 *of FACT-B, it is comprised of the aforementioned FACT-G plus the 9-item BCS (breast cancer*
- 474 subscale). Combined, the questionnaire is called the FACT-B.
- 475 **OT2-019-09:** Functional assessment of cancer therapy-general version (FACT-G) (FACIT)
- 476 The FACIT Measurement System is a collection of QOL questionnaires targeted to the
- 477 management of chronic illness. "FACIT" (Functional Assessment of Chronic Illness Therapy)
- 478 was adopted as the formal name of the measurement system in 1997 to portray the expansion of
- 479 *the more familiar "FACT" (Functional Assessment of Cancer Therapy) series of questionnaires*
- 480 into other chronic illnesses and conditions. Thus, FACIT is a broader, more encompassing term
- 481 *that includes the FACT questionnaires under its umbrella. The measurement system, under*
- 482 *development since 1987, began with the creation of a generic CORE questionnaire called the*
- 483 Functional Assessment of Cancer Therapy-General (FACT-G). The FACT-G (now in Version 4)

- 484 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 485
- 486 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 487

the general population (using a slightly modified version). 488

- These measures are a sample of patient-level survey tools available from Functional Assessment 489 of Chronic Illness Therapy (FACIT)¹¹ that assess patient functioning and quality of life that are
- 490
- generally used in clinical trials and care management. The tools are well-tested and widely used 491
- at the individual patient level; however, the tools have not been used to assess the quality of care 492
- at a clinician or practice level. The Cancer TAP and Steering Committee agreed the survey tools 493
- are excellent, but believed that additional work was needed to determine how they could be used 494
- for public reporting and making comparisons among providers. 495
- 496

Candidate Consensus Standards without Final Recommendation 497

OT1-009-09: Optimal diabetes care (Minnesota Community Measurement) 498

- The percentage of adult diabetes patients who have optimally managed modifiable risk factors 499
- (A1c, LDL, blood pressure, tobacco non-use, and daily aspirin usage) with the intent of 500
- preventing or reducing future complications associated with poorly managed diabetes. 501
- Patients ages 18-75 with a diagnosis of diabetes, who meet all the numerator targets of this 502
- composite measure: A1c <8.0, LDL <100, blood pressure (BP) <130/80, tobacco non-user, and 503

for patients age 41+ daily aspirin use unless contraindicated. 504

The Committee noted that this "all or none" composite measure aligns with endorsed component 505

- 506 measures with the exception of the BP target level at <130/80. Committee members referred to
- the recently published results of the ACCORD trial¹⁰ that did not find improved outcomes for 507
- aggressive blood pressure management below 140/90, while the occurrence of adverse outcomes 508
- such as syncope were higher. The Committee generally supported the measure but asked the 509
- 510 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 511

512	Systems Improvement (ICSI) and they will wait until any changes are made to the guidelines
513	before considering changes to the measure. ICSI expects to complete its review of the diabetes
514	guidelines in August 2010. Overall the Committee was supportive of the measure and would
515	recommend after resolution of the BP threshold. In addition, some Committee members
516	suggested that the developer should also consider including eye exams and screening for renal
517	function.
518	
519	<u>OT1-029-09: Comprehensive Diabetes Carecomposite (National Committee for Quality</u>
520	Assurance [NCQA])
521	The percentage of individuals 18-75 years of age with diabetes (type 1 and type 2) who had each
522	of the following:
523	<u>HbA1c poor control (>9.0 percent)*</u>
524	<u>HbA1c control (<8.0 percent)</u>
525	<u>HbA1c control for a special population (<7.0 percent)</u>
526	• <u>Blood pressure control (\geq140/90 mm Hg)*</u>
527	• <u>Eye examination</u>
528	<u>Smoking status and cessation advice or treatment</u>
529	• <u>LDL control ($\geq 130 \text{ mg/dL}$)</u>
530	• <u>LDL control (<100 mg/dL)</u>
531	<u>Nephropathy assessment</u>
532	This composite measure includes eight endorsed component measures which were recently
533	reviewed by the Diabetes TAP for their scheduled maintenance review. While the Committee did
534	not recommend endorsement of the measure #OT1-028-09 HbA1c control (<7.0 percent) as a
535	standalone individual measure as discussed later in this report, the Committee was supportive of
536	all three HbA1c control measures being used together to describe the complete picture of
537	diabetes management by a provider. The composite uses threshold cutoffs and weights to
538	generate a summary score out of a possible 100 points.
539	

- 540 Following the member and public comment period, Tthe Committee considered several
- 541 <u>comments regarding inclusion of the Hgb-A1c <7 component in this composite measure. The</u>
- 542 <u>Committee revisited the implications of the recent published results of the ADVANCE⁷ and</u>
- 543 ACCORD trials^{8,9} that suggested that very strict control does not lead to better clinical outcomes
- 544 and may be associated with significant side effects. The Committee decided to re-evaluate this
- 545 <u>measure at the same time as the final evaluation of the revised -OT1-009-09 Optimal Diabetes</u>
- 546 <u>Care measure. An addendum to this report on these two composite measures for diabetes will be</u>
- 547 distributed following these final evaluations.
- 548

549 Gaps in Desirable Outcome Measures

550 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

553 important, desirable outcome measures. The<u>se</u> recommendations will be presented in a later

- 554 report.
- 555

556 Additional Recommendations

- 557 **1.** Apply measures to the broadest populations possible.
- 558 The Committee strongly recommends that measure developers consider the broadest 559 application of measures and not include restrictive specifications, such as payer or 560 coverage type, or age limitations, unless appropriate for the condition.
- 561

562

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

567		serve patient populations that are extremely vulnerable to disparities, and for facilities
568		located in areas of underserved populations, the stratified results would not necessarily be
569		small numbers.
570		
571	3.	Provide rationale for use of hierarchical <u>risk model methodology</u> modeling .
572	1	Committee members recommend that measure developers provide the rationale for
573		selecting the risk model methodology using hierarchical modeling and describe the
574	I	impact on discrimination and usability of the results for public reporting and quality
575		improvement compared to other methods. The Committee also discussed the use of
576		stepwise modeling that can leave out important confounders or effect modifiers. The
577		Committee recommends that NQF establish more guidance and criteria for evaluating
578		risk models, particularly those that seem to minimize variation and reduce differentiation
579		among providers.
580	I	
581	4.	Consider endorsing reporting mechanisms.
582		NQF should consider whether evaluation and endorsement should extend to reporting
583		mechanisms and rating systems as a general policy for all projects. If so, appropriate
584		criteria should be established for this evaluation.

NOTES

- Donabedian A, The quality of care. How can it be assessed? JAMA, 1988;260(12):1743-1748.
- National Quality Forum (NQF), *National Priorities Partnership*, Washington, DC: NQF. Available at <u>www.nationalprioritiespartnership.org</u>. Last accessed April 2010.
- 3. <u>www.qualityforum.org/projects/Patient_Outcome_Measures_Phases1-2.aspx</u>. Last accessed April 2010.
- NQF, *Measure Evaluation Criteria*, Washington, DC: NQF; 2008. Available at <u>www.qualityforum.org/docs/measure_evaluation_criteria.aspx</u>. Last accessed April 2010.
- 5. Information regarding the Prometheus payment model is available at www.prometheuspayment.org.
- Information regarding the American College of Surgeons' National Surgical Quality Improvement Program (NSQIP) is available at https://acsnsqip.org/main/about_overview.asp.
- Information regarding the Action in Diabetes and Vascular Disease: Preterax and Diamicro MR Controlled Evaluation (ADVANCE) trial is available at <u>www.advance-trial.com/static/html/prehome/prehome.asp</u>.
- 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.
- 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 <u>www.facit.org</u>.
- 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.

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of
				Number of	All discharges	0	Electronic	Analysis
OT1-010-	Acute	Agency for	Number of deaths	Number of	All discharges,	• Missing	Electronic	Facility/
09	-	Healthcare	per 100	inpatient deaths	age 18 years and	discharge	adminstrative	Agency
	infarction	Research and	discharges with a	(DISP = 20)	older, with a	disposition	data/claims	
	(AMI)	Quality	principal	among cases	principal	(DISP =		
	mortality		diagnosis code of	meeting the	diagnosis code of	missing)		
	rate		acute myocardial	inclusion and	acute myocardial	• Transferring to		
			infarction.	exclusion rules	infarction.	another short-		
				for the		term hospital		
				denominator.	Time Window:	(DISP = 2)		
				denominator.	Typically 12	• MDC 14		
				Time Window:	months, but may			
						(pregnancy,		
				During admission	•	childbirth, and		
					user.	puerperium)		
					ICD-9-CM Acute	Case-Mix		
					Myocardial	Adjustment:		
					Infarction (AMI)	Adjustments		
					diagnosis code in	were made for		
					the principal	age, 3M [™] All		
					diagnosis code	Patient Refined		
					U			
					position:	Diagnosis		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description	Due e ve e inc De vel		Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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 Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			_	appropriate antimicrobial therapy, k. Physician's diagnosis, l. Physician institutes				
OT1-029-	Comprehen	National		appropriate antimicrobial therapy.	Members with	Optional	Electronic	Clinicians:
011-029- 09	Comprehen sive	Committee	The percentage of individuals 18-75	Percentage of members 18-75	diabetes (type 1	Exclusions:	adminstrative	Group,
	diabetes	for Quality	years of age with	years of age with	and 2) as of	Members	data/claims,	Clinicians:
	care	Assurance	diabetes (type 1	diabetes (type 1	December 31 of	with a	Electronic	Individual,
			and type 2) who	and 2) who had	the measurement	diagnosis of	Health/ Madical	Clinicians:
			had each of the following:	each of the following:	year	polycystic ovaries who	Medical Record,	Other
			ionowing.	following.		did not have	Electronic	
			 Hemoglobin 	1) HbA1c		any face to	clinical data,	
			Ale (HbAle)	Testing An		face	Lab data,	
			testing	HbA1c test			pharmacy	

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
				automated HbA1c		have any		
				level is >9.0% or		face-to-face		
				is missing a result		encounters		
				or if an HbA1c		with a		
				test was not done		diagnosis of		
				during the		diabetes, in		
				measurement		any setting,		
				year. The		during the		
				member is not		measuremen		
				numerator		t year or the		
				compliant if the		year prior to		
				automated result		the		
				for the most		measuremen		
				recent HbA1c test		t year.		
				during the				
				measurement year				
				is <u>≤9.0%.</u>				
				An organization				
				that uses CPT				
				Category II codes				
				to identify				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
TUIIDEI		Stewaru		numerator		Aujustinents		Analysis
				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
			p	<u>is ≥8.0% or is</u>				
				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				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
			2.0001.p.000	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				
				i <u>s ≥7.0% or is</u>				
				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				

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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				1111119,515
				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				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions / Adjustments	Data Source	Level of Analysis
				compliant if the		12030000000		<u> </u>
				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				
				$is \ge 100 \text{ mg/dL or}$				
				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				<i>j ~_~</i>
				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				J
				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				
1				BP reading during				

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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				

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Measure Number	Measure Title	Measure Steward	Measure Description	Numerator		Exclusions / Adjustments	Data Source	Level of Analysis
-			•	to evaluate				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
				whether the				
				member is				
				numerator				
				compliant for				
				both systolic and				
				diastolic levels.				
OT1-030-	Proportion	Bridges To	Percent of adult	Outcome:	Adult patients	Denominator	Electronic	Clinicians:
09	of patients	Excellence	population aged	Potentially	aged 18-65 years	exclusions	adminstrative	group,
	hospitalize		18-65 years who	avoidable	who had a	include	data/claims,	health plan,
	d with AMI		were admitted to	complications	relevant	exclusions of	Pharmacy	Population:
	that have a		a hospital with	(PACs) in patients	hospitalization for	either "patients"	data	national,
	potentially		acute myocardial	hospitalized for	AMI (with no	or "claims"		Population:
	avoidable		infarction (AMI),	AMI occurring	exclusions) and	based on the	A two-year,	regional/net
	complicatio		were followed for	during the index	were followed for	following	national	work.
	n (during		one month after	stay or in the 30-	one month after	criteria:	commercially	Population:
	the index		discharge, and	day post-	discharge.		insured	states,
	stay or in		had one or more	discharge period.		1) "Patients"	population	Population:
	the 30-day		potentially		The time window	excluded are	(CIP) claims	counties or
	post-		avoidable	The time window	starts with a	those that have	database was	cities
	discharge		complications	starts with a	hospitalization for	any form of	used as our	

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
	period)		(PACs). PACs	hospitalization for	AMI and	cancer, ESRD	development	
			may occur during	AMI and	continues for one	(end-stage renal	al database.	
			the index stay or	continues for one	month after	disease),	The database	
			during the 30-day	month after	discharge.	transplants such	had 4.7	
			post-discharge	discharge.		as lung or heart-	million	
			period. We		Details: Please	lung transplant	covered lives	
			define PACs	Details: Patients	refer to the	or	and \$95	
			during each time	that had an index	enclosed excel	complications	billion in	
			period as one of	hospitalization for	workbook entitled	related to	"allowed	
			three types:	AMI, and were	NQF_AMI_all_co	transplants,	amounts" for	
				identified as	des_1.22.10. The	pregnancy and	claims costs.	
			A) PACs During	having services	target population	delivery, HIV,	The database	
			the Index Stay	for potentially	should have the	or suicide.	was an	
			(Hospitalization):	avoidable	following criteria:	2) "Claims" are	administrativ	
			1) PACs related	complications	1. Have an index	excluded from	e claims	
			to the index	(PACs) either	hospitalization	the AMI	database with	
			condition: The	during the index	with a trigger	measure if they	medical as	
			index stay is	hospitalization or	code as defined in	are considered	well as	
			regarded as	within one month	the AMI	not relevant to	pharmacy	
			having a PAC if	after discharge	TRIGGERS tab 2.	AMI care or are	claims. The	
			during the index	from the index	The patient	for major	methodology	

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			hospitalization the	hospitalization.	should have	surgical services	can be used	
			patient develops	The enclosed	continuous	that suggest that	on any	
			one or more	excel workbook	enrollment for the	AMI may be a	claims	
			complications	entitled	entire time	comorbidity	database with	
			such as cardiac	NQF_AMI_all_co	window with no	associated with	at least two	
			arrest, ventricular	des_01.22.10	enrollment gaps	the procedure,	years of	
			fibrillation,	gives the detailed	with the entity	e.g., CABG	data and a	
			cardiogenic	codes for PACs.	providing the data	procedure.	minimum of	
			shock, stroke,	Services for PACs	(so we can ensure	Patients where	150 patients	
			coma, acute post-	are identified as	that the database	the index	with the	
			hemorrhagic	followed: a. In	has captured all	hospitalization	index	
			anemia, etc. that	the EXPND AMI	the claims for the	claim is	condition or	
			may result	TRGS tab, claims	patient in the time	excluded are	hospitalizatio	
			directly due to	with ICD-9	window). 3. Do	automatically	n. Having	
			AMI or its	diagnosis codes,	not have an	excluded from	pharmacy	
			management.	ICD-9 procedure	exclusion code.	both the	data adds to	
			2) PACs due to	codes or CPT	Exclusion codes	numerator and	the richness	
			comorbidities:	codes marked	are defined in the	the	of the	
			The index stay is	with an	same fashion as in	denominator.	risk-	
			also regarded as	assignment PAC	the Denominator		adjustment	
			having a PAC if	in column B. b. In	Exclusion section.	Details:	models. A	

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

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

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

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

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			database was an			identified as a		
			administrative			"1" in column C		
			claims database			labeled		
			with medical as			Irrelevant_		
			well as pharmacy			claims. c. In the		
			claims			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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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)		
						102 / 00000)		
						Risk-		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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.		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						comorbidities,		
						procedures		
						performed, as		
						well as		
						pharmacy		
						variables.		
						Variable		
						Descriptions:		
						AGE		
						CONTINUOUS		
						VARIABLE		
						GENDER		
						FEMALE		
						(MALE IS		
						REFERENCE)		
						BACL1		
						ANTICOAGUL		
						ANTS EDIAB		
						ANTIDIABETI		
						CS GIACD		
						ANTACIDS		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						AND		
						ANTISPASMO		
						DICS HACEI		
						ACEI, ARB,		
						ANTI-RENIN		
						DRUGS		
						HBBLK BETA-		
						BLOCKERS		
						HCLBK		
						CALCIUM		
						CHANNEL		
						BLOCKING		
						AGENTS		
						HNITR		
						NITRATES		
						AND OTHER		
						ANTIANGINA		
						LS HOTHR		
						OTHER		
						CARDIOVASC		
						ULAR		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						AGENTS		
						HPLT		
						ANTIPLATEL		
						ET AGENTS,		
						THROMBIN		
						INHIBITORS		
						HSTN		
						STATINS AND		
						OTHER ANTI-		
						LIPID		
						AGENTS		
						HVSDL		
						VASODILATO		
						RS LDECG		
						DECONGEST		
						ANTS AND		
						ANTIHISTAMI		
						NICS LOTHR		
						INHALERS		
						AND		
						RESPIRATOR		

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						CAPILLARIES		
						M20 CHRONIC		
						OBSTRUCTIV		
						Е		
						PULMONARY		
						DISEASE AND		
						BRONCHIECT		
						ASIS M21		
						ASTHMA M22		
						OTHER		
						RESPIRATOR		
						Y		
						INFECTIONS		
						AND		
						DISEASES		
						M23		
						ESOPHAGEAL		
						DISORDERS		
						M24		
						DISEASES OF		
						THE		

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						REHABILITAT		
						ION AND		
						AFTER CARE		
						M37 NAUSEA,		
						VOMITING,		
						MALAISE,		
						FATIGUE,		
						FEVER M4		
						DIABETES		
						MELLITUS		
						WITHOUT		
						COMPLICATI		
						ON M5 FLUID		
						AND		
						ELECTROLYT		
						Е		
						DISTURBANC		
						ES M6 OTHER		
						ENDOCRINE,		
						NUTRITIONA		
						L AND		

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Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Title	Steward	Description			Adjustments		Analysis
					METABOLIC		
					DISEASES		
					AND		
					IMMUNITY		
					DISORDERS		
					M7		
					DISORDERS		
					OF LIPID		
					,		
					,		
						TitleStewardDescriptionAdjustmentsImage: StewardDescriptionMETABOLIC DISEASES AND IMMUNITY DISORDERS M7Image: Steward M7Image: StewardImage: Steward Home <td>TitleStewardDescriptionAdjustmentsImage: Construction of the second second</td>	TitleStewardDescriptionAdjustmentsImage: Construction of the second

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						EPISODE OF		
						AMI MIRF10		
						HEART		
						FAILURE,		
						CARDIOMYO		
						PATHY,		
						CARDIOMEG		
						ALY,		
						HYPERTENSI		
						VE HEART		
						MIRF14		
						OBESITY,		
						SLEEP APNEA		
						MIRF15		
						INTRA-		
						AORTIC		
						BALLOON		
						PUMP		
						MIRF2		
						UNSPECIFIED		
						EPISODE OF		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						AMI MIRF3		
						SUBSEQUENT		
						CARE FOR		
						AMI MIRF4		
						SUBENDOCA		
						RDIAL		
						INFARCT		
						MIRF5		
						CARDIAC		
						CATHETERIZ		
						ATION,		
						ANGIOGRAPH		
						Y MIRF6		
						PTCA, STENT,		
						INTRACORON		
						ARY		
						THROMBOLY		
						TICS MIRF7		
						PACEMAKER,		
						AICD		
						IMPLANTATI		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						ON MIRF8		
						ELECTROPHY		
						SIOLOGICAL		
						STUDIES,		
						CRYOABLATI		
						ON,		
						CARDIOVERS		
						ION MIRF9		
						CARDIAC		
						ARRTHYTHM		
						IAS AND		
						CONDUCTION		
						DISORDERS		
						NDEPR		
						ANTIDEPRES		
						SANTS NSEDT		
						SEDATIVES		
						AND		
						HYPNOTICS		
						P13		
						RESPIRATOR		

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						С		
						PROCEDURES		
						The risk		
						adjustment		
						variables and		
						their prevalence		
						in our		
						population are		
						listed in the		
						enclosed		
						workbook		
						entitled		
						NQF_AMI_Ris		
						k-		
						Adjustment_2.1		
						6.10.xls – see		
						tabs		
						CIP_RiskFactor		
						s. The output of		
						the regression		
						model are given		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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.x		
						ls		

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			period as one of	hospitalization for	enclosed excel	complications	billion in	
			three types:	stroke, and were	workbook entitled	related to	"allowed	
				identified as	NQF_Stroke_all_	transplants,	amounts" for	
			A) PACs During	having services	codes_1.22.10.	intracranial	claims costs.	
			the Index Stay	for potentially	The target	trauma,	The database	
			(Hospitalization):	avoidable	population should	pregnancy and	was an	
			1) PACs related	complications	have the	delivery, HIV,	administrativ	
			to the index	(PACs) either	following criteria:	or suicide.	e claims	
			condition: The	during the index	1. Have an index	2) "Claims" are	database with	
			index stay is	hospitalization or	hospitalization	excluded from	medical as	
			regarded as	within one month	with a trigger	the stroke	well as	
			having a PAC if	after discharge	code as defined in	measure if they	pharmacy	
			during the index	from the index	the Stroke	are considered	claims. The	
			hospitalization for	hospitalization.	TRIGGERS tab 2.	not relevant to	methodology	
			stroke the patient	The enclosed	The patient	stroke care or	can be used	
			develops one or	excel workbook	should have	are for major	on any	
			more	entitled	continuous	surgical services	claims	
			complications	NQF_Stroke_all_	enrollment for the	that suggest that	database with	
			such as	codes_1.22.10	entire time	stroke may be a	at least two	
			hypertensive	gives the detailed	window with no	comorbidity or	years of	
			encephalopathy,	codes for PACs.	enrollment gaps	complication	data and a	

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			during the	(labeled Stroke		well as "claims"	download	
			hospitalization	PAC) c. In the		not relevant to	from the	
			(i.e., it was not	proc tab, claims		stroke care.	website to	
			present on	with either ICD-9		Patients where	calculate	
			admission).	procedure codes		the index	PAC rates	
			Examples of these	or CPT codes that		hospitalization	using their	
			PACs are diabetic	map to one of the		claim is	own data.	
			emergency with	CCS procedure		excluded are	The	
			hypo- or	categories		automatically	methodology	
			hyperglycemia,	identified as a "1"		excluded from	has been	
			pneumonia, lung	in column D		both the	tested on	
			complications,	(labeled Stroke		numerator and	databases of	
			acute myocardial	PAC) d. In the		the	several	
			infarction,	Pharm tab,		denominator.	health plans	
			gastritis, ulcer, GI	pharmacy claims		Please refer to	as well as on	
			hemorrhage, etc.	that map to a		the enclosed	a few	
			3) PACs	category		excel workbook	employer	
			suggesting patient	identified as a		entitled	databases.	
			safety failures:	PAC in the Stroke		NQF_Stroke_all		
			The index stay is	Action Descr		_codes_1.22.10.		
			regarded as	column These		1. "Patients" are		

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

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

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

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			with medical as			labeled "Stroke		
			well as pharmacy			Irrelevant		
			claims. The two			claims		
			tabs demonstrate			(Exclude)" c. In		
			the most common			the Pharm tab,		
			PACs that			pharmacy		
			occurred in			claims that map		
			patients			to a category		
			hospitalized with			identified as a		
			stroke.			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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		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 due		
						to factors that		
						they could		
						control and thus		
						result in fewer		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
OT2-002-	Risk	American	This is a hospital-	The outcome of	Patients	Adjustments:	Electronic	Facility/
09	adjusted	College of	based, risk-	interest is	undergoing any	From 271,368	Health/	Agency
	colorectal	surgeons	adjusted, case	hospital-specific,	ACS NSQIP	patient records	Medical	
	surgery		mix-adjusted,	risk-adjusted	listed (primary	in the 2008	Records,	
	outcome		morbidity and	mortality, a return	CPT) colorectal	ACS NSQIP	Electronic	
	measure		mortality	to the operating	surgical	data file, 21,694	clinical data,	
			composite	room, or any of	procedure.	acceptable	paper	
			outcome measure	the following	1	records from	medical	
			of adults 18+	morbidities as	(44140, 44141,	211 hospitals	record/	
			years undergoing	defined by	44143, 44144,	(mean/hospital	flowsheet.	
			colorectal	American College	44145, 44146,	= 103) were		
			surgery.	of Surgeons	44147, 44150,	analyzed.		
				National Surgical	44151, 44155,	Records were		
				Quality	44156, 44157,	excluded either		
				Improvement	44158, 44160,	because of		
				Program (ACS	44204, 44205,	missing values		
				NSQIP): Cardiac		for critical		
				arrest requiring	44208, 44210,	variables or		
				CPR, myocardial	44211, 44212,	because the		
				infarction, DVT	45110, 45111,	primary CPT		
				requiring therapy,		code could not		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
				suctioning		procedure		
				requirements b.		cannot be		
				New onset or		accrued into the		
				worsening cough,		program as a		
				or dyspnea, or		new index		
				tachypnea c.		procedure.		
				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				

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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, 1.				
				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.		9		
OT2-005- 09	30-day post- hospital PNA (Pneumoni a) 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.	their expected values for the	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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
				lead to a wide				
			These events are	variation in				
			relatively	opinion. The				
			common,	weights of $-4, -2,$				
			measurable using	and 1 are selected				
			readily available	to represent order				
			administrative	of magnitude				
			data, and	differences in				
			associated with	seriousness of the				
			effective	three outcomes,				
			coordination of	which most would				
			care after	agree to (that is to				
			discharge. The	say: readmission				
			input for this	is more important				
			score is the result	-				
			of measures for	more important in				
			each of these	a negative way				
			three events that	than E & M				
			are being	service is in a				
			submitted	positive way).				
			concurrently	The idea on not				

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			under the Patient	using weights was				
			Outcomes	also considered,				
			Measures Phase II	but this was noted				
			project's Call for	to be itself a de				
			Measures. Each	facto weight				
			of these	scheme (with all				
			individual	weights the				
			measures is a	same), and as				
			risk-adjusted,	such, a weight				
			standardized rate	scheme that was				
			together with a	less appropriate				
			percentile	than the one				
			ranking. This	chosen.				
			composite					
			measure is a	Time Window:				
			weighted average	Each of the				
				individual				
			of the three risk-	measures in the				
			adjusted,	composite is				
			standardized rates	computed				
			from the	annually, as a				

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			population mean	three year rolling				
			for the measure	average.				
			across all patients					
			in all hospitals.	Details: The				
			Again, the	details on each				
			composite	individual				
			measure is	measure				
			accompanied by a	comprising the				
			percentile ranking	component				
			to help with its	measure are				
			interpretation.	provided in their				
				submission for				
				NQF approval.				
OT2-013-	Proportion	Bridges To	Percent of adult	Outcome:	Adult patients	Denominator	Electronic	Clinicians:
09	of patients	Excellence	population aged	Potentially	aged 18-65 years	exclusions	adminstrative	Group,
	hospitalize		18-65 years who	avoidable	who had a	include	data/claims,	Health
	d with		were admitted to	complications	relevant	exclusions of	Pharmacy	Plan,
	pneumonia		a hospital with	(PACs) in patients	hospitalization for	either "patients"	data	Population:
	that have a		pneumonia, were	hospitalized for	pneumonia (with	or "claims"		national,
	potentially		followed for one	pneumonia	no exclusions)	based on the	A two-year,	Population:
	avoidable		month after	occurring during	and were	following	national,	regional/net

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
	complicatio		discharge, and	the index stay or	followed for one	criteria:	commercially	work,
	n (during		had one or more	in the 30-day	month after		insured	Population:
	the index		potentially	post-discharge	discharge.	1) "Patients"	population	states,
	stay or in		avoidable	period.		excluded are	(CIP) claims	Population:
	the		complications		The time window	those that have	database was	counties or
	30-day		(PACs). PACs	The time window	starts with a	any form of	used as our	cities
	post-		may occur during	starts with a	hospitalization for	cancer	development	
	discharge		the index stay or	hospitalization for	pneumonia and	(especially	al database.	
	period)		during the 30-day	pneumonia and	continues for one	cancer of lung	The database	
			post-discharge	continues for one	month after	and bronchus),	had 4.7	
			period.	month after	discharge.	thalassemia,	million	
				discharge.		sickle-cell	covered lives	
			We define PACs		Details: Please	disease, ESRD	and \$95	
			during each time	Details: Patients	refer to the	(end-stage renal	billion in	
			period as one of	that had an index	enclosed excel	disease),	"allowed	
			three types:	hospitalization for	workbook entitled	transplants such	amounts" for	
				pneumonia, and	NQF_Pneumomia	as lung or heart-	claims costs.	
			A) PACs During	were identified as	_all_codes_1 22	lung transplant	The database	
			the Index Stay	having services	10. The target	or	was an	
			(Hospitalization):	for potentially	population should	complications	administrativ	
			1) PACs related	avoidable	have the	related to	e claims	

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			hospitalization	codes or CPT		not relevant to	methodology	
			(i.e., it was not	codes that map to		pneumonia care.	has been	
			present on	one of the CCS		Patients where	tested on	
			admission).	procedure		the index	databases of	
			Examples of these	categories		hospitalization	several	
			PACs are diabetic	identified as a "1"		claim is	health plans	
			emergency with	in column D		excluded are	as well as on	
			hypo- or	(labeled		automatically	a few	
			hyperglycemia,	Pneumonia PAC)		excluded from	employer	
			stroke, coma,	d. In the Pharm		both the	databases.	
			gastritis, ulcer, GI	tab, pharmacy		numerator and		
			hemorrhage, acute	claims that map to		the		
			renal failure, etc.	a category		denominator.		
			3) PACs	identified as a		Please refer to		
			suggesting patient	PAC in the		the enclosed		
			safety failures:	Pneum action		excel workbook		
			The index stay is	descr column		entitled		
			regarded as	These claims are		NQF_Pneumoni		
			having a PAC if	included as PACs		a_all_codes_1		
			there is one or	only if the PAC is		22 10. 1.		
			more	NOT present on		"Patients" are		

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

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

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

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
			well as pharmacy			of the CCS		
			claims.			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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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		
						AUE		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						CONTINUOUS		
						VARIABLE		
						BACL1		
						ANTICOAGUL		
						ANTS EDIAB		
						ANTIDIABETI		
						CS ESTER		
						STEROIDS		
						GENDER 1=M		
						0=F GIEM		
						ANTIEMETIC		
						S HACEI		
						ACEI, ARB,		
						ANTI-RENIN		
						DRUGS		
						HBBLK BETA-		
						BLOCKERS		
						HCLBK		
						CALCIUM		
						CHANNEL		
						BLOCKING		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						LBDIL		
						BRONCHODIL		
						ATORS AND		
						OTHER		
						ANTIASTHMA		
						TICS		
						LDECG		
						DECONGEST		
						ANTS AND		
						ANTIHISTAMI		
						NICS LOTHR		
						INHALERS		
						AND		
						RESPIRATOR		
						Y AGENTS M1		
						TB,		
						MYCOSES,		
						OTHER		
						INFECTIOUS		
						AND		
						PARASITIC		

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						HEART		
						DISORDERS		
						M15		
						CORONARY		
						ATHEROSCLE		
						ROSIS AND		
						OTHER		
						HEART		
						DISEASE M16		
						CHF,		
						CARDITIS,		
						CARDIOMYO		
						PATHY M18		
						DISEASES OF		
						ARTERIES		
						ARTERIOLES		
						AND		
						CAPILLARIES		
						M20 CHRONIC		
						OBSTRUCTIV		
						E		

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						ION AND		
						AFTER CARE		
						M37 NAUSEA,		
						VOMITING,		
						MALAISE,		
						FATIGUE,		
						FEVER M4		
						DIABETES		
						MELLITUS		
						WITHOUT		
						COMPLICATI		
						ON M5 FLUID		
						AND		
						ELECTROLYT		
						Е		
						DISTURBANC		
						ES M6 OTHER		
						ENDOCRINE,		
						NUTRITIONA		
						L AND		
						METABOLIC		

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						HOME		
						HEALTH,		
						TRANSPORT		
						P28		
						MEDICATION		
						ADMINISTRA		
						TION P31		
						DME, VISUAL		
						AND		
						HEARING		
						AIDS P35		
						BRONCHOSC		
						OPY,		
						MEDIASTINO		
						SCOPY P36 CT		
						SCAN AND		
						OTHER		
						RESPIRATOR		
						Y		
						DIAGNOSTIC		
						PROCEDURES		

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						STREPT,		
						PNEUMOCOC		
						CAL,		
						H.INFLUENZA		
						E, OTHER		
						SPECIFIED		
						PNEUMONIAE		
						PNRF3		
						MYCOPLASM		
						А,		
						CHLAMYDIA,		
						BRONCHOPN		
						EUMONIA		
						PNRF5		
						STAPH,		
						MRSA, GRAM		
						NEG &		
						ANAEROBIC		
						PNEUMONIA		
						PNRF6 ACUTE		
						RESPIRATOR		

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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_Pneumoni		
						a_all_codes_1		
						22 10.xls		
OT2-022-	Proportion	Bridges To	Percent of adult	Outcome:	Adult patients	Denominator	Electronic	Health
09	of patients	Excellence	population aged	Potentially	aged 18-65 years	exclusions	administrativ	Plan,
	with a		18-65 years who	avoidable	who had a trigger	include	e data /	Clinicians:
	chronic		were identified as	complications	code for one of	exclusions of	claims,	group,
	condition		having at least	(PACs) in patients	the six chronic	either "patients"	Pharmacy	Population:
	that have a		one of the	having one of six	conditions:	or "claims"	data	national,
	potentially		following six	chronic	Diabetes Mellitus	based on the		Population:

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			considered a	the trigger code.	Details: Please	surgical services	pharmacy	
			potentially		refer to the	that suggest that	data adds to	
			avoidable	Details: Patients	enclosed excel	the chronic	the richness	
			complication,	that had a trigger	workbook entitled	condition	of the	
			unless that	for one of the six	NQF_Chronic_Ca	should be a	risk-	
			hospitalization is	chronic	re_All_Codes_2.9	comorbidity	adjustment	
			considered to be a	conditions:	.10. The target	associated with	models. A	
			typical service for	Diabetes Mellitus	population should	the procedure,	standardized	
			a patient with that	(DM), Congestive	have the	e.g., CABG	SAS-based	
			condition.	Heart Failure	following criteria:	procedure or hip	program has	
			Additional PACs	(CHF), Coronary	1. Patients that	replacement	been	
			that can occur	Artery Disease	had a trigger for	surgery, etc.	developed	
			during the	(CAD),	one of the six	4) Additionally,	that users	
			calendar year	Hypertension	chronic	the episode does	could	
			include those	(HTN), Chronic	conditions:	not start until	download	
			related to	Obstructive	Diabetes Mellitus	there is a stable	from our	
			emergency room	Pulmonary	(DM), Congestive	trigger claim.	website	
			visits, as well as	Disease (COPD)	Heart Failure	For patients	(www.prome	
			other professional	or Asthma, and	(CHF), Coronary	where the initial	theuspaymen	
			or ancillary	were identified as	Artery Disease	trigger code is	t.org) to	
			services tied to a	having services	(CAD),	on a hospital	calculate	

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			potentially	for potentially	Hypertension	claim, or if the	PAC rates	
			avoidable	avoidable	(HTN), Chronic	initial trigger	using their	
			complication.	complications	Obstructive	claim has a	own data.	
				(PACs) either due	Pulmonary	trigger	The	
			We define PAC	to	Disease (COPD)	exclusion code	methodology	
			hospitalizations	hospitalizations,	or Asthma, and	(suggesting that	has been	
			and PAC	emergency room	were followed up	the patient is	tested on	
			professional and	visits or related	for a one-year	unstable at the	databases of	
			other services as	professional	from the trigger	time of	several	
			one of three	services during	code (see tab	trigger), the	health plans	
			types:	the one-calendar	entitled	episode is	as well as on	
				year (12 months)	"Triggers" in the	triggered only	a few	
			A) PAC-Related	from the trigger	enclosed	when a stable	employer	
			Hospitalizations:	code. The	workbook). 2.	trigger claim is	databases.	
			1)	enclosed excel	The trigger claim	identified.		
			Hospitalizations	workbook entitled	should not be an	Claims relevant		
			related to the	NQF_Chronic_Ca	inpatient stay	to the chronic		
			index condition:	re_All_Codes_2.9	claim 3. The	condition but		
			Hospitalizations	.10 gives the	trigger claim	prior to		
			due to acute	detailed codes for	should not have	the trigger claim		
			exacerbations of	PACs. Services	one of the acute	are therefore		

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			as joint	the Medical tab,		excel workbook		
			replacement,	ICD-9 diagnosis		entitled		
			CABG, etc.) are	codes that map to		NQF_Chronic_		
			not counted as	one of the CCS		Care_All_Code		
			PACs.	diagnosis		s_2.9.10. 1.		
			3)	categories		"Patients" are		
			Hospitalizations	identified as a "1"		excluded from		
			suggesting patient	in columns		the chronic care		
			safety failures:	labeled PAC.		measures if they		
			Hospitalizations	There are six		meet one of the		
			for major	columns for each		following		
			infections, deep	of the six chronic		criteria: a. If age		
			vein thrombosis,	conditions. (4) In		is < 18 years or		
			adverse drug	the Procedural		> = 65 years b.		
			events, and other	tab, ICD-9		If gender is		
			patient safety-	procedure codes		missing c. If		
			related events are	or CPT codes that		they do not have		
			considered PACs.	map to one of the		continuous		
				CCS procedure		enrollment for		
			B) Other PACs	categories		the entire one-		
			During the	identified as a "1"		year time		

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

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

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

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

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
			hospitalizations is	Classification		Typical or PAC		
			low (for all	System to		in each of the		
			chronic care	categorize CPT		"Expnd Trgs"		
			conditions	codes into the		tab are filter		
			summed together,	same AHRQ		codes for that		
			PAC frequency	procedure		chronic		
			was 6.32% of all	categories as for		condition. b.		
			PAC	ICD-9 codes)		Claims with		
			occurrences), they			ICD-9 diagnosis		
			amount to more			codes that map		
			than 58% of the			to one of the		
			PAC medical			CCS diagnosis		
			costs.			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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						((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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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.		

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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	
Number	Title	Steward	Description			Adjustments		Analysis
						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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Measure	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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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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	Measure	Measure	Measure	Numerator	Denominator	Exclusions /	Data Source	Level of
Number	Title	Steward	Description			Adjustments		Analysis
						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.		

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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

Parkland Health and Hospital System, Dallas, TX

Lawrence M. Becker

Xerox Corporation, Rochester, NY

E. Patchen Dellinger, MD

University of Washington School of Medicine, Seattle, WA

Anne Deutsch, PhD, RN

Rehabilitation Institute of Chicago, Chicago, IL

Brian Fillipo, MD, MMM

Connecticut Hospital Association, Wallingford, CT

Linda Gerbig, RN, MSPH

Texas Health Resources, Arlington, TX

Edward F. Gibbons, MD

University of Washington School of Medicine, Seattle, WA

Sheldon Greenfield, MD

University of California, Irvine, Irvine, CA

Linda Groah, RN, MSN, CNOR

Association of perioperative Registered Nurses, Denver, CO

Patricia K. Haugen

National Breast Cancer Coalition, Sioux Falls, SD

David Herman, MD

Mayo Clinic, Rochester, MN

David S. P. Hopkins, MS, PhD

Pacific Business Group on Health, San Francisco, CA



Dianne V. Jewell, PT, DPT, PhD, CCS

Virginia Commonwealth University, Richmond, VA

David A. Johnson, MD

American College of Gastroenterology, Norfolk, VA

Iver Juster, MD

ActiveHealth Management, Sausalito, CA

Burke Kealey, MD, FHM

HealthPartners, Minneapolis, MN

Pauline McNulty, PhD

Johnson & Johnson Pharmaceutical Services, LLC, Raritan, NJ

Lee Newcomer, MD, MHA

United HealthCare, Edina, MN

Vanita K. Pindolia, PharmD, BCPS

Henry Ford Health System, Detroit, MI

Amy K. Rosen, PhD

Boston University School of Public Health, Bedford, MA

Barbara J. Turner, MD, MSED, MA

American College of Physicians, Philadelphia, PA

Barbara Yawn, MD

Olmstead Medical Center, Rochester, MN

NQF Staff

Helen Burstin, MD, MPH

Senior Vice President, Performance Measures

Reva Winkler, MD, MPH

Senior Consultant

Heidi Bossley, MSN, MBA

Senior Director

Alexis Forman, MPH

Project Manager

Hawa Camara

Research Analyst

Sarah Fanta

Research Analyst



Cancer Technical Advisory Panel

Lee Newcomer, MD, MHA (Chair)

United HealthCare, Edina, MN

Lawrence Bassett, MD

David Geffen School of Medicine at UCLA, Los Angeles, CA

Susan Beck, PhD, APRN

University of Utah College of Nursing/ Huntsman Cancer Institute, Salt Lake City, UT

Christopher R. Friese, RN, PhD, AOCN

University of Michigan School of Nursing, Ann Arbor

Susan Goodin, PharmD, BCOP

The Cancer Institute of New Jersey, UMDNJ-Robert Wood Johnson Medical School, New Brunswick, NJ

Patricia K. Haugen

National Breast Cancer Coalition, Sioux Falls, SD

Mary Maniscalco-Theberge, MD

Veterans Health Administration, Washington, DC

David Penson, MD, MPH

Vanderbilt University Medical Center, Nashville, TN

Louis Potters, MD

North Shore-Long Island Jewish Health System, New Hyde Park, NY

Joe B. Putnam, MD

Vanderbilt University Medical Center, Nashville, TN

Larissa Temple, MD, MSc

Memorial Sloan-Kettering Cancer Center, New York, NY

Bonnie Teschendorf, PhD, MHA

Johnson & Johnson, Malvern, PA



Cardiovascular Technical Advisory Panel

Edward F. Gibbons, MD (Chair)

University of Washington School of Medicine, Seattle, WA

Sana M. Al-Khatib, MD, MHS

Duke University Medical Center, Durham, NC

Bojan Cercek, MD, PhD

Cedars-Sinai Medical Center, Los Angeles, CA

Michael Crouch, MD

Memorial Family Medicine Residency Program, Sugarland, TX

Stephen Ellis, MD

Cleveland Clinic, Cleveland, OH

Irene L. Katzan, MD, MS

Cleveland Clinic, Cleveland, OH

Richard L. Prager, MD

University of Michigan Medical Center, Ann Arbor, MI

Michael W. Rich, MD

Washington University School of Medicine, St. Louis, MO

Anton N. Sidawy, MD

Veterans Affairs Medical Center, McLean, VA

Sarah Spinler, PharmD

University of the Sciences in Philadelphia, Philadelphia, PA



Diabetes/Metabolic Technical Advisory Panel

Sheldon Greenfield, MD (Chair)

University of California, Irvine, CA

R. Keith Campbell, RPh, FASHP, CDE

Washington State University College of Pharmacy, Pullman, WA

Stephen Fadem, MD, FACP, FASN

Renal Physicians Association, Rockville, MD

Karen Fitzner, PhD

American Association of Diabetes Educators, Chicago, IL

Carol Motes Headley, DNSc, MSN, RN, CNN

Veterans Affairs Medical Center, Memphis, TN

Richard Hellman, MD, FACP, FACE

University of Missouri-Kansas City School of Medicine, Leawood, KS

Allen R. Nissenson, MD, FACP, FASN

David Geffen School of Medicine at UCLA, Los Angeles, CA

Erica Swegler, MD

North Hills Family Medicine, Keller, TX



GI/Biliary Technical Advisory Panel

David A. Johnson, MD, FACP, FACG, FASGE (Chair)

American College of Gastroenterology, Norfolk, VA

John I. Allen, MD, MBA, AGAP, FACG

Minnesota Gastroenterology, Bloomington, MN

Karen Hall, MD, PhD

East Ann Arbor Health and Geriatric Center, Ann Arbor, MI

Brian Jacobson, MD, MPH

Boston University Medical Center, Boston, MA

Dick Johannes, MD, MS

CareFusion, Marlborough, MA

Rocco Ricciardi, MD, MPH

Lahey Clinic Medical Center, Burlington, MA



Infectious Disease Technical Advisory Panel

E. Patchen Dellinger, MD (Chair)

University of Washington School of Medicine, Seattle, WA

Curtis D. Collins, PharmD, MS, BCPS

The University of Michigan Health System, Ypsilanti, MI

Thomas M. File, MD

Summa Health Systems, Akron, OH

Eric Mortensen, MD, MSc, FACP

The University of Texas Health Science Center at San Antonio, San Antonio, TX

Amy Ray, MD, MPH

University Hospitals of Cleveland, Cleveland, OH

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	ТЈС		
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