NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0365 **NQF Project:** Surgery Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Pancreatic Resection Mortality Rate (IQI 9)
De.2 **Brief description of measure:** Percentage of adult discharges with procedure code of pancreatic resection with an in-hospital death, stratified by benign and malignant disease
1.1-2 **Type of Measure:** Outcome De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** Paired with Pancreatic Resection Volume (IQI 2) (NQF #0366)
De.4 **National Priority Partners Priority Area:** Safety De.5 **IOM Quality Domain**: Effectiveness, Safety De.6 **Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least	**B** **Y**☐

every 3 years. Yes, information provided in contact section	N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public Reporting, Quality Improvement (Internal to the specific organization)	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	Met Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. ***Measures must be judged to be important to measure and report*** *in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** In the 2008 State Inpatient Databases (SID), there were 14,225 procedures for pancreatic resection and 584 in-hospital deaths in 1,286 hospitals. The following table shows the observed rates stratified by condition (non-pancreatic cancer/benign, pancreatic cancer/malignant): Column 1: Strata Column 2: Numerator Column 3: Denominator Column 4: Observed Mortality Rate (numerator / denominator) Non-Pancreatic Cancer 274 6,532 0.0419 Pancreatic Cancer 310 7,590 0.0408 All cases 584 14,122 0.0414 (103 cases out of 14,225 were excluded due to missing discharge disposition) There is no evidence for the construct validity of pancreatic resection beyond the volume-outcome relationship. Ten studies examined hospital volume as compared to in-hospital mortality rates. Glasgow and Mulvihill estimated the following risk-adjusted mortality rates across hospital volume categories during the 5-year study period: 14% for 1-5 procedures, 10% for 6-10 procedures, 9% for 11-20 procedures, 7% for 21-30 procedures, 8% for 31-50 procedures, and 4% for over 50 procedures. [1] Leiberman et al. found that surgeon volume was less significantly associated with mortality (6-13% across three volume categories). [2]	1a C☐ P☐ M☐ N☐

1a.4 Citations for Evidence of High Impact: Updated citations will be presented in the May Steering Committee meeting

[1] Glasgow RE, Mulvihill SJ. Hospital volume influences outcome in patients undergoing pancreatic resection for cancer. West J Med 1996;165(5):294-300. 83Lieberman MD, Kilburn H,
[2] Lindsey M, et al. Relation of perioperative deaths to hospital volume among patients undergoing pancreatic resection for malignancy. Ann Surg 1995;222(5):638-45.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Pancreatic resection is a rare procedure that requires technical proficiency; and errors in surgical technique or management may lead to clinically significant complications, such as sepsis, anastomotic breakdown, and death. Better processes of care may reduce mortality for pancreatic resection, which represents better quality care.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Adjusted rates by patient and hospital characteristics, 2007

Mean	Standard error	Location	P-value: Relative to Northeast
47.761	6.121	Northeast	1.000
26.717	5.586	Midwest	0.011
34.519	3.804	South	0.066
28.151	5.436	West	0.017

1b.3 Citations for data on performance gap:
See the following report for a complete treatment of the methodology: "Methods: Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the National Healthcare Quality Report" [URL: http://hcupnet.ahrq.gov/QI%20Methods.pdf?JS=Y]

1b.4 Summary of Data on disparities by population group:
Adjusted per 1,000 rates by patient characteristics, 2007

Estimate	Standard error	Age: for conditions affecting any age
25.49604219	6.203	18-44
20.63896702	2.915	45-64
43.18047556	3.987	65 and over

Estimate	Standard error	Age: for conditions affecting elderly
*	*	65-69
30.91154165	7.113	70-74
56.01131066	7.673	75-79
77.51645429	13.220	80-84
148.3092157	37.401	85 and over

Estimate	Standard error	Gender
40.43211936	3.541	Male
25.18097072	3.554	Female

Estimate	Standard error	Median income of patient´s ZIP code
32.2066155	4.894	First quartile (lowest income)
50.61487453	5.663	Second quartile
34.67138371	5.002	Third quartile
23.7719501	4.527	Fourth quartile (highest income)

1b
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P ☐
M ☐
N ☐

Estimate	Standard error	Location of patient residence (NCHS)
39.14557373	4.453	Large central metropolitan
34.65704118	5.007	Large fringe metropolitan
34.61234796	5.208	Medium metropolitan
35.87092944	10.635	Small metropolitan
*	*	Micropolitan
*	*	Not metropolitan or micropolitan

Estimate	Standard error	Expected payment source
24.43308661	4.746	Private insurance
33.50889221	3.078	Medicare
56.92297577	11.372	Medicaid
168.3490653	28.408	Other insurance
70.49679743	18.397	Uninsured / self-pay / no charge

Estimate	Standard error	Hospital Ownership/control
34.84590011	2.947	Private, not-for-profit
50.63209793	8.493	Private, for-profit
23.51722576	5.534	Public

Estimate	Standard error	Teaching status
26.71084935	3.052	Teaching
48.35344955	4.291	Nonteaching

Estimate	Standard error	Location of hospital
27.41877829	3.309	Large central metropolitan
70.90692851	8.270	Large fringe metropolitan
33.81007218	4.897	Medium metropolitan
44.21470167	9.807	Small metropolitan
*	*	Micropolitan
*	*	Not metropolitan or micropolitan

Estimate	Standard error	Bed size of hospital
*	*	Less than 100
46.62748379	5.684	100 - 299
44.13589384	4.564	300 - 499
23.4343551	3.502	500 or more

1b.5 Citations for data on Disparities:
See the following report for a complete treatment of the methodology: "Methods: Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the National Healthcare Quality Report" [URL: http://hcupnet.ahrq.gov/QI%20Methods.pdf?JS=Y]

1c. Outcome or Evidence to Support Measure Focus

1c
C ☐
P ☐
M ☐

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Pancreatic resection is a rare

procedure that requires technical proficiency; and errors in surgical technique or management may lead to clinically significant complications, such as sepsis, anastomotic breakdown, and death. Better processes of care may reduce mortality for pancreatic resection, which represents better quality care.

1c.2-3. Type of Evidence: Evidence-based guideline, Expert opinion

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
There is no evidence for the construct validity of pancreatic resection beyond the volume-outcome relationship. Ten studies examined hospital volume as compared to in-hospital mortality rates. Glasgow and Mulvihill estimated the following risk-adjusted mortality rates across hospital volume categories during the 5-year study period: 14% for 1-5 procedures, 10% for 6-10 procedures, 9% for 11-20 procedures, 7% for 21-30 procedures, 8% for 31-50 procedures, and 4% for over 50 procedures. [1] Leiberman et al. found that surgeon volume was less significantly associated with mortality (6-13% across three volume categories). [2]

[1] Glasgow RE, Mulvihill SJ. Hospital volume influences outcome in patients undergoing pancreatic resection for cancer. West J Med 1996;165(5):294-300. 83Lieberman MD, Kilburn H,

[2] Lindsey M, et al. Relation of perioperative deaths to hospital volume among patients undergoing pancreatic resection for malignancy. Ann Surg 1995;222(5):638-45.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
5 Smoothing recommended Testing, rating, and review were conducted by the project team. A full report on the literature review and empirical evaluation can be found in Refinement of the HCUP Quality Indicators by the UCSF-Stanford EPC, Detailed coding information for each QI is provided in the document Prevention Quality Indicators Technical Specifications. Rating of performance on empirical evaluations, ranged from 0 to 26. The scores were intended as a guide for summarizing the performance of each indicator on four empirical tests of precision (signal variance, area-level share, signal ratio, and R-squared) and five tests of minimum bias (rank correlation, top and bottom decile movement, absolute change, and change over two deciles), as described in the previous section.

1c.6 Method for rating evidence: The project team conducted extensive empirical testing of all potential indicators using the 1995-97 HCUP State Inpatient Databases (SID) and Nationwide Inpatient Sample (NIS) to determine precision, bias, and construct validity. The 1997 SID contains uniform data on inpatient stays in community hospitals for 22 States covering approximately 60% of all U.S. hospital discharges. The NIS is designed to approximate a 20% of U.S. community hospitals and includes all stays in the sampled hospitals. Each year of the NIS contains between 6 million and 7 million records from about 1,000 hospitals. The NIS combines a subset of the SID data, hospital-level variables, and hospital and discharge weights for producing national estimates. The project team conducted tests to examine three things: precision, bias, and construct validity.
Precision. The first step in the analysis involved precision tests to determine the reliability of the indicator for distinguishing real differences in provider performance. For indicators that may be used for quality improvement, it is important to know with what precision, or surety, a measure can be attributed to an actual construct rather than random variation.
For each indicator, the variance can be broken down into three components: variation within a provider (actual differences in performance due to differing patient characteristics), variation among providers (actual differences in performance among providers), and random variation. An ideal indicator would have a substantial amount of the variance explained by between-provider variance, possibly resulting from differences in quality of care, and a minimum amount of random variation. The project team performed four tests of precision to estimate the magnitude of between-provider variance on each indicator:
• Signal standard deviation was used to measure the extent to which performance of the QI varies systematically across hospitals or areas.
• Provider/area variation share was used to calculate the percentage of signal (or true) variance relative to the total variance of the QI.
• Signal-to-noise ratio was used to measure the percentage of the apparent variation in QIs across providers that is truly related to systematic differences across providers and not random variations (noise) from year to year.
• In-sample R-squared was used to identify the incremental benefit of applying multivariate signal extraction

N☐

methods for identifying additional signal on top of the signal-to-noise ratio.
In general, random variation is most problematic when there are relatively few observations per provider, when adverse outcome rates are relatively low, and when providers have little control over patient outcomes or variation in important processes of care is minimal. If a large number of patient factors that are difficult to observe influence whether or not a patient has an adverse outcome, it may be difficult to separate the "quality signal" from the surrounding noise. Two signal extraction techniques were applied to improve the precision of an indicator:
• Univariate methods were used to estimate the "true" quality signal of an indicator based on information from the specific indicator and 1 year of data.
• Multivariate signal extraction (MSX) methods were used to estimate the "true" quality signal based on information from a set of indicators and multiple years of data. In most cases, MSX methods extracted additional signal, which provided much more precise estimates of true hospital or area quality.
Bias. To determine the sensitivity of potential QIs to bias from differences in patient severity, unadjusted performance measures for specific hospitals were compared with performance measures that had been adjusted for age and gender. All of the PQIs and some of the Inpatient Quality Indicators (IQIs) could only be risk-adjusted for age and sex. The 3M™ APR-DRG System Version 12 with Severity of Illness and Risk of Mortality subclasses was used for risk adjustment of the utilization indicators and the in-hospital mortality indicators, respectively. Five empirical tests were performed to investigate the degree of bias in an indicator:
• Rank correlation coefficient of the area or hospital with (and without) risk adjustment—gives the overall impact of risk adjustment on relative provider or area performance.
• Average absolute value of change relative to mean—highlights the amount of absolute change in performance, without reference to other providers' performance.
• Percentage of highly ranked hospitals that remain in high decile—reports the percentage of hospitals or areas that are in the highest deciles without risk adjustment that remain there after risk adjustment is performed.
• Percentage of lowly ranked hospitals that remain in low decile—reports the percentage of hospitals or areas that are in the lowest deciles without risk adjustment that remain there after risk adjustment is performed.
• Percentage that change more than two deciles—identifies the percentage of hospitals whose relative rank changes by a substantial percentage (more than 20%) with and without risk adjustment.
Construct validity. Construct validity analyses provided information regarding the relatedness or independence of the indicators. If quality indicators do indeed measure quality, then two measures of the same construct would be expected to yield similar results. The team used factor analysis to reveal underlying patterns among large numbers of variables—in this case, to measure the degree of relatedness between indicators. In addition, they analyzed correlation matrices for indicators.

1c.7 Summary of Controversy/Contradictory Evidence: See the following for a complete treatment of the topic:
http://qualityindicators.ahrq.gov/Downloads/Modules_Non_Software/Modules%20Development%20Bullet/iqi_development.zipNote: The Literature Review Caveats column summarizes evidence specific to each potential concern on the link between the PQIs and quality of care, as described in step 3 above. A question mark (?) indicates that the concern is theoretical or suggested, but no specific evidence was found in the literature. A check mark indicates that the concern has been demonstrated in the literature.

1c.8 Citations for Evidence (*other than guidelines***):**
http://qualityindicators.ahrq.gov/Downloads/Modules_Non_Software/Modules%20Development%20Bullet/iqi_development.zip

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
Not Applicable.

1c.10 Clinical Practice Guideline Citation: Not Applicable.
1c.11 National Guideline Clearinghouse or other URL: Not Applicable.

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
Not Applicable.

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**

Not Applicable. 1c.14 **Rationale for using this guideline over others:** Not Applicable.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report*?	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met? **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 **Do you have a web page where current detailed measure specifications can be obtained?** S.2 **If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** In-hospital deaths among cases meeting the inclusion and exclusion rules for the denominator. 2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** Time window can be determined by user, but is generally a calendar year. Note the volume-outcome relationship is based on volume over a one year time period. 2a.3 **Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** In-hospital deaths (DISP=20)	
2a.4 **Denominator Statement (***Brief, text description of the denominator - target population being measured***):** Hospital discharges, age 18 years and older, with an ICD-9-CM pancreatic resection procedure code in any field, stratified by benign and malignant disease. 2a.5 **Target population gender:** Female, Male 2a.6 **Target population age range:** 18 and older 2a.7 **Denominator Time Window (***The time period in which cases are eligible for inclusion in the denominator***):** Time window can be determined by user, but is generally a calendar year. Note the volume-outcome relationship is based on volume over a one year time period. 2a.8 **Denominator Details (***All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):** ICD-9-CM pancreatic resection procedure codes: 526 TOTAL PANCREATECTOMY 527 RADICAL PANCREATICODUODENECT 52.51 Proximal pancreatectomy 52.52 Distal pancreatectomy	**2a-specs** **C☐** **P☐** **M☐** **N☐**

52.53
Radical subtotal pancreatectomy
52.59
Other partial pancreatectomy

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Exclude cases:
• missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1 =missing)
• transferring to another short-term hospital (DISP=2)
• MDC 14 (pregnancy, childbirth, and puerperium)

ICD-9-CM codes:
577.0
Acute pancreatitis

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Exclude cases:
• missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1 =missing)
• transferring to another short-term hospital (DISP=2)
• MDC 14 (pregnancy, childbirth, and puerperium)
ICD-9-CM codes:
577.0
Acute pancreatitis

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
Malignant Disease:
ICD-9-CM pancreatic cancer diagnosis codes:
1520
MALIGNANT NEOPL DUODENUM
1561
MAL NEO EXTRAHEPAT DUCTS
1562
MAL NEO AMPULLA OF VATER
1570
MAL NEO PANCREAS HEAD
1571
MAL NEO PANCREAS BODY
1572
MAL NEO PANCREAS TAIL
1573
MAL NEO PANCREATIC DUCT
1574
MAL NEO ISLET LANGERHANS
1578
MALIG NEO PANCREAS NEC
1579
MALIG NEO PANCREAS NOS

Benign Disease:
All other cases

2a.12-13 Risk Adjustment Type: Risk adjustment method widely or commercially available

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
The predicted value for each case is computed using a hierarchical model (logistic regression with hospital

random effect) and covariates for gender, age in years (in 5-year age groups), All Patient Refined-Diagnosis Related Group (APR-DRG) and APR-DRG risk-of-mortality subclass. The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2008 (updated annually), a database consisting of 43 states and approximately 30 million adult discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.

Specific covariates included in the model for this indicator:
Intercept
Sex Female
Age 65 to 74
Age 75+
APR-DRG '2603' to '2604'
APR-DRG '2201' to '2202'
APR-DRG '2203' to '2204'
MDC 7
MDC Other
WHIPPLE Whipple Procedure
Note: APR-DRG 260 is Major Pancreas, Liver & Shunt Procedures; APR-DRG 220 is Major Stomach, Esophageal & Duodenal Procedures. MDC 7 is Diseases & Disorders of the Hepatobiliary System & Pancreas.

2a.15-17 **Detailed risk model available Web page URL or attachment:** URL None
http://qualityindicators.ahrq.gov/Downloads/Software/SAS/V43/Risk%20Adjustment%20Tables%20IQI%204.3.pdf

2a.18-19 **Type of Score:** Rate/proportion
2a.20 **Interpretation of Score:** Better quality = Higher score
2a.21 **Calculation Algorithm (***Describe the calculation of the measure as a flowchart or series of steps***):**
Each indicator is expressed as a rate, defined as outcome of interest / population at risk or numerator / denominator. The AHRQ Quality Indicators (AHRQ QI) software performs a number of steps to produce the rates. 1) Discharge-level data is used to identify inpatient records containing the outcome of interest and 2) the population at risk. For provider indicators, the population at risk is also derived from hospital discharge records. 3) Calculate observed rates. Using output from steps 1 and 2, rates are calculated for user-specified combinations of stratifiers. 4) Calculate expected rates. Regression coefficients from a reference population database are applied to the discharge records and aggregated to the provider level. 5) Calculate risk-adjusted rate. Use the indirect standardization to account for case-mix. 6) Calculate smoothed rate. A Univariate shrinkage factor is applied to the risk-adjusted rates. The shrinkage estimate reflects a reliability adjustment unique to each indicator.

2a.22 **Describe the method for discriminating performance** *(e.g., significance testing)***:**
Significance testing is not prescribed by the software. Users may calculate a confidence interval for the risk-adjusted rates and a posterior probability interval for the smoothed rates at a 95% or 99% level. Users may define the relevant benchmark and the methods of discriminating performance according to their application.

2a.23 **Sampling (Survey) Methodology** *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
Not applicable

2a.24 **Data Source (***Check the source(s) for which the measure is specified and tested)*
Administrative claims

2a.25 **Data source/data collection instrument (***Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008. Agency for Healthcare Research and Quality, Rockville, MD

2a.26-28 **Data source/data collection instrument reference web page URL or attachment:** URL None
www.hcup-us.ahrq.gov/databases.jsp.

2a.29-31 Data dictionary/code table web page URL or attachment: URL None
http://www.qualityindicators.ahrq.gov/Downloads/Software/WinQI/V42/AHRQ%20Data%20Dictionary%20v4.1a.pdf

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Facility

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Hospital/Acute Care Facility

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp. Contains 30 million adult discharges and 4,000 hospitals

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
Our metric of reliability is the signal to noise ratio. The signal to noise ratio is the ratio of the between hospital variance (signal) to the within hospital variance (noise). The formula is signal / (signal + noise). The ratio itself is only a diagnostic for the degree of variance in the risk-adjusted rate systematically associated with the provider. Therefore, what matters is the magnitude of the variance in the "smoothed" rate (that is, the variance in the risk-adjusted rate after the application of the univariate shrinkage estimator based on the signal ratio).

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
Updated Testing Results including both benign and malignant cases:

What the data demonstrate is systematic variation in the provider level rate of 10.2 to 85.6 per 1,000 from the 5th to 95th percentile after a signal ratio of 0.549 is applied as the shrinkage estimator (that is, after accounting for variation due to random factors). (the signal ratio for benign cases only is 0.451 and for malignant cases only is 0.350)

2b C☐ P☐ M☐ N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:** We used 100 percent national analytic files from the CMS for the calendar years 2003 through 2006. Medicare Provider Analysis and Review (MEDPAR) files, which contain hospital discharge abstracts for all fee-for-service acute care hospitalizations of all U.S. Medicare recipients, were used to create our main analytical datasets. The Medicare denominator file was used to assess patient vital status at 30 days. Using appropriate procedure codes fiom the International Classification of Diseases, version 9 (ICD-9 codes), we identified all patients aged 65-99 undergoing pancreatectomy. [1]

2c.2 Analytic Method *(type of validity & rationale, method for testing)***:**
We first estimated risk-adjusted hospital mortality rates during 2003-2004. We defined mortality as death within 30 days of operation or before hospital discharge. We adjusted for patient age, gender, race, urgency of operation, median ZIP-code income, and coexisting medical conditions. Using logistic regression, we estimated the expected number of deaths in each hospital and then
divided the observed deaths by this expected number of deaths to obtain the ratio of observed to expected mortality (O/E ratio). We then multiplied the O/E ratio by the average mortality rate to obtain a risk-adjusted mortality rate for each hospital. We next used hierarchical modeling techniques to adjust these mortality estimates for reliability. Using random effects logistic regression models, we generated empirical Bayes predictions of mortality for each hospital. [1]

2c C☐ P☐ M☐ N☐

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
In assessing the ability of hospital mortality rankings to predict future performance, reliability adjustment was particularly important for pancreatic resection and AAA repair, hospital rankings based on reliability-adjusted mortality were superior at identifying hospitals likely to have the lowest future mortality. Without reliability adjustment, hospitals in the "best" quintile (2003-2004) with pancreatic resection had a mortality of 7.6 percent in 2005-2006; with reliability adjustment, the "best" hospital quintile had a mortality of 2.7 percent in 2003-2006. [1]

References

[1] Dimick, Justin B.; Staiger, Douglas O.; Birkmeyer, John D. Ranking hospitals on surgical mortality: the importance of reliability adjustment. Health Serv Res. 2010 Dec;45(6 Pt 1):1614-29. doi: 10.1111/j.1475-6773.2010.01158.x. Epub 2010 Aug 16.

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
In the 2008 State Inpatient Databases (SID), the specification excludes 1,072 cases with acute pancreatis

2d.2 Citations for Evidence:
Not applicable

2d.3 Data/sample *(description of data/sample and size)*: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp. Contains 30 million adult discharges and 4,000 hospitals

2d.4 Analytic Method *(type analysis & rationale)*:
Not applicable

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
Not applicable

2d
C ☐
P ☐
M ☐
N ☐
NA ☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp. Contains 30 million adult discharges and 4,000 hospitals

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
Risk-adjustment models use a standard set of categories based on readily available classification systems for demographics, severity of illness and comorbidities. Within each category, covariates are initially selected based on a minimum of 30 cases in the outcome of interest. Then a stepwise regression process on a development sample is used to select a parsimonious set of covariates where p<.05. Model is then tested on a validation sample

2e.3 Testing Results *(risk model performance metrics)*:
Updated Testing Results including both benign and malignant cases:

Discrimination: Model c-statistic of 0.787 (0.806 for non-pancreatic cancer cases and 0.753 for pancreatic cancer cases)

Calibration: Risk Decile Table:

Column 1: Risk Decile
Column 2: Number of Patients
Column 3: Observed Rate (numerator / denominator)
Column 4: Predicted Rate (numerator / denominator)

2e
C ☐
P ☐
M ☐
N ☐
NA ☐

1	1,413	0.0208	0.0129
2	1,412	0.0041	0.0137
3	1,412	0.0078	0.0171
4	1,412	0.0170	0.0175
5	1,412	0.0149	0.0217
6	1,413	0.0199	0.0253
7	1,412	0.0330	0.0375
8	1,412	0.0604	0.0556
9	1,412	0.0602	0.0709
10	1,412	0.1605	0.1266

2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** Not applicable

2f. Identification of Meaningful Differences in Performance

2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp. Contains 30 million adult discharges and 4,000 hospitals

2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*:
Posterior probability distribution parameterized using the Gamma distribution

2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
Updated Testing Results including both benign and malignant cases:

Raw Rates (numerator / denominator)

Strata	5th	25th	Median	75th	95th
Non-Pancreatic Cancer	0.0078	0.0201	0.0344	0.0543	0.0943
Pancreatic Cancer	0.0123	0.0241	0.0358	0.0508	0.0789
All cases	0.0102	0.0224	0.0353	0.0525	0.0856

2f C☐ P☐ M☐ N☐

2g. Comparability of Multiple Data Sources/Methods

2g.1 **Data/sample** *(description of data/sample and size)*: Not applicable

2g.2 **Analytic Method** *(type of analysis & rationale)*:
Not applicable

2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*:
Not applicable

2g C☐ P☐ M☐ N☐ NA☐

2h. Disparities in Care

2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Median income of patient´s ZIP code:
1) Estimate 2) Standard error 3) P-value: Relative to marked group-c 4) P-value:
2007 relative to 2006
First quartile (lowest income) 32.207 4.894 0.206 0.000
Second quartile 50.615 5.663 0.000 0.154
Third quartile 34.671 5.002 0.106 0.586
Fourth quartile (highest income)c 23.772 4.527 0.024

2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**
Users may stratify based on gender and race/ethnicity

2h C☐ P☐ M☐ N☐ NA☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, met? **Rationale:**	***2*** **C** ☐ **P** ☐ **M** ☐ **N** ☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** California (state) Hospital Inpatient Mortality Indicators for California http://www.oshpd.ca.gov/HID/Products/PatDischargeData/AHRQ/iqi-imi_overview.html Florida (state) Florida Health Finder http://www.floridahealthfinder.gov/ Kentucky (Norton Healthcare, a hospital system) Norton Healthcare Quality Report http://www.nortonhealthcare.com/body.cfm?id=157 Massachusetts (state) My HealthCare Options http://www.mass.gov/healthcareqc New Jersey (state) Find and Compare Quality Care in NJ Hospitals http://www.nj.gov/health/healthcarequality/ New York (health care coalition) New York State Hospital Report Card http://www.myhealthfinder.com/ Texas (state) Reports on Hospital Performance http://www.dshs.state.tx.us/thcic/ Vermont (state) Dept of Banking, Insurance, Securities & Health Care Administration Comparison Report http://www.bishca.state.vt.us/health-care/hospitals-health-care-practitioners/2009-vermont-hospital-report-card Washington (health care coalition) Washington State Hospital Report Card http://www.myhealthfinder.com/wa09/index.php	**3a** **C** ☐ **P** ☐ **M** ☐ **N** ☐

Wisconsin (state hospital association)
CheckPoint
http://www.wicheckpoint.org/index.aspx

The measure is also reported on HCUPnet:
http://hcupnet.ahrq.gov/HCUPnet.jsp?Id=EB57801381F71C41&Form=MAINSEL&JS=Y&Action=%3E%3ENext%3E%3E&_MAINSEL=AHRQ%20Quality%20Indicators

This measure is used in the MONAHRQ system that is provided for public reporting and quality improvement throughout the United States: http://monahrq.ahrq.gov/

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
University Healthcare Consortium - An alliance of 103 academic medical centers and 219 of their affiliated hospitals. Reporting the AHRQ QIs to their member hospitals. (see www.uhc.edu. Note: measure results reported to hospitals; not reported on site).

Dallas Fort Worth Hospital Council – Reporting on measure results to over 70 hospitals in Texas (see www.dfwhc.ord. Note: measure results reported to hospitals; not reported on site).

Norton Healthcare - a multi-hospital system in Kentucky (see
http://www.nortonhealthcare.com/about/Our_Performance/index.aspx)

Ministry Health Care - a multi-hospital system in Wisconsin (see
http://ministryhealth.org/display/router.aspx. Note: measure results reported to hospitals; not reported on site).

Minnesota Hospital Association
http://www.mnhospitals.org/ Note: measure used in quality improvement. Not reported publicly by the association)

Premier - Premier´s "Quality Advisor" tool provides performance reports to approximately 650 hospitals for their use in monitoring and improving quality. Hospitals receive facility specific reports on this measure in Quality Advisor.

This measure is used in the MONAHRQ system that is provide for public reporting and quality improvement throughout the United States: http://monahrq.ahrq.gov/

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)***:** AHRQ 2007 State Inpatient Databases (SID) with 4,000 hospitals and 30 million adult discharges

3a.5 Methods *(e.g., focus group, survey, QI project)***:**
A research team from the School of Public Affairs, Baruch College, under contracts with the Department of Public Health, Weill Medical College and Battelle, Inc., has developed a pair of Hospital Quality Model Reports at the request of the Agency for Healthcare Research & Quality (AHRQ). These reports are designed specifically to report comparative information on hospital performance based on the AHRQ Quality Indicators (QIs). The work was done in close collaboration with AHRQ staff and the AHRQ Quality Indicators team.
The Model Reports (discussed immediately above) are based on:
• Extensive search and analysis of the literature on hospital quality measurement and reporting, as well as public reporting on health care quality more broadly;
• Interviews with quality measurement and reporting experts, purchasers, staff of purchasing coalitions, and executives of integrated health care delivery systems who are responsible for quality in their facilities;
• Two focus groups with chief medical officers of hospitals and/or systems and two focus groups with quality managers from a broad mix of hospitals;

• Four focus groups with members of the public who had recently experienced a hospital admission; and • Four rounds of cognitive interviews (a total of 62 interviews) to test draft versions of the two Model Reports with members of the public with recent hospital experience, basic computer literacy but widely varying levels of education. 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*: Given the above review of the literature and original research that was conducted, a Model report was the result that could help sponsors use the best evidence on public reports so they are most likely to have the desired effects on quality	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** Leapfrog measure is based on AHRQ specification, but is not risk-adjusted	**3b** C☐ P☐ M☐ N☐ NA ☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** AHRQ measure is risk-adjusted, is paired with a volume measure and is part of a composite measure 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** Volume is, by itself, not an adequate proxy for case-mix	**3c** C☐ P☐ M☐ N☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions	**4c**

4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Coding professionals follow detail guidelines, are subject to training and credentialing requirements, peer review and audit. This procedure is performed only by a select number of hospitals, which may compromise the precision of the indicator.	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Providers may wish to examine several consecutive years to potentially increase the precision of this indicator. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** All data necessary to calculate this measure are routinely collected for hospital administrative purposes. The software for calculating the measure is available for free at: http://qualityindicators.ahrq.gov/software/default.aspx 4e.3 **Evidence for costs:** All data necessary to calculate this measure are routinely collected for hospital administrative purposes. The software for calculating the measure is available for free at: http://qualityindicators.ahrq.gov/software/default.aspx 4e.4 **Business case documentation:** All data necessary to calculate this measure are routinely collected for hospital administrative purposes. The software for calculating the measure is available for free at: http://qualityindicators.ahrq.gov/software/default.aspx	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y☐ N☐ A☐
CONTACT INFORMATION	
Co.1 **Measure Steward (Intellectual Property Owner)**	

Co.1 **Organization**
Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, Maryland, 20850

Co.2 **Point of Contact**
John, Bott, Contractor, AHRQ Quality Indicators Measure Expert Center for Delivery, Organization and Markets, John.Bott@ahrq.hhs.gov, 301-427-1317-

Measure Developer If different from Measure Steward
Co.3 **Organization**
Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, Maryland, 20850

Co.4 **Point of Contact**
John, Bott, MSSW, MBA, John.Bott@AHRQ.hhs.gov, 301-427-1317-

Co.5 **Submitter If different from Measure Steward POC**
John, Bott, MSSW, MBA, John.Bott@AHRQ.hhs.gov, 301-427-1317-, Agency for Healthcare Research and Quality

Co.6 **Additional organizations that sponsored/participated in measure development**

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
UC Davis,
Stanford University,
Battelle Memorial Institute

Ad.2 **If adapted, provide name of original measure:** None
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2001
Ad.7 **Month and Year of most recent revision:** 08, 2011
Ad.8 **What is your frequency for review/update of this measure?** Annual
Ad.9 **When is the next scheduled review/update for this measure?** 12, 2011

Ad.10 **Copyright statement:** The AHRQ QI software is publicly available; no copyright disclaimers

Ad.11 **Disclaimers:** None

Ad.12 -14 **Additional Information web page URL or attachment:** URL None
http://qualityindicators.ahrq.gov/modules/iqi_resources.aspx

Date of Submission (*MM/DD/YY*)**:** 02/01/2011

AHRQ Quality Indicators

AHRQ Quality Indicator:
Risk Adjustment Coefficients for the IQI

Department of Health and Human Services
Agency for Healthcare Research and Quality
http://www.qualityindicators.ahrq.gov

Version 4.2 (September, 2010)

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Table 1. Risk Adjustment Coefficients for IQI #08— Esophageal Resection Volume

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-3.8815	0.2265	293.7139	<.0001
Age	65 to 74	1	0.4983	0.2738	3.3112	0.0688
Age	75+	1	0.8957	0.2954	9.1947	0.0024
APR-DRG	'1629'	1	1.6892	0.2779	36.9574	<.0001
MDC	6	1	2.7804	0.2836	96.106	<.0001
MDC	OTHER	1	2.3974	0.8411	8.1236	0.0044
c-statistic	0.766					

Table 2. Risk Adjustment Coefficients for IQI #09— Pancreatic Resection Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-3.595	0.2383	227.5534	<.0001
Sex	Female	1	-0.5729	0.2218	6.6745	0.0098
Age	65 to 74	1	0.641	0.2821	5.1632	0.0231
Age	75+	1	0.9908	0.2652	13.9585	0.0002
APR-DRG	'2603' to '2604'	1	0.9376	0.2482	14.2674	0.0002
MDC	7	1	2.7111	0.4888	30.767	<.0001
MDC	Other	1	1.0136	0.3301	9.4297	0.0021
c-statistic	0.717					

Table 3. Risk Adjustment Coefficients for IQI #11— AAA Repair Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-6.1888	0.2224	774.3759	<.0001
Sex	Female	1	0.4288	0.1136	14.2558	0.0002
Age	65 to 74	1	0.4506	0.1807	6.2158	0.0127
Age	75 to 79	1	1.1624	0.1874	38.4863	<.0001
Age	80 to 84	1	1.3711	0.1891	52.5659	<.0001
Age	85+	1	1.6313	0.2101	60.2862	<.0001
APR-DRG	'1691' to '1692'	1	1.91	0.1953	95.6603	<.0001
APR-DRG	'1693' to '1694'	1	3.1784	0.2076	234.431	<.0001
APR-DRG	'1733' to '1734'	1	2.2529	0.227	98.4816	<.0001
MDC	5	1	3.1733	0.2233	201.9927	<.0001
MDC	Other	1	3.0364	0.2938	106.8306	<.0001
RUPTURED		1	1.8117	0.1389	170.0351	<.0001
c-statistic	0.909					

Table 4. Risk Adjustment Coefficients for IQI #12— CABG Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-5.5584	0.1655	1127.9205	<.0001
Sex	Female	1	0.3537	0.0498	50.384	<.0001
Age	40 to 49	1	-0.4934	0.1563	9.9619	0.0016
Age	50 to 54	1	-0.3632	0.1411	6.6268	0.01
Age	55 to 59	1	-0.3226	0.1173	7.5635	0.006
Age	65 to 84	1	0.1919	0.0776	6.1097	0.0134
Age	85+	1	0.7057	0.1182	35.6658	<.0001
APR-DRG	'1611' to '1612'	1	1.823	0.3899	21.8585	<.0001
APR-DRG	'1613'	1	3.2934	0.2398	188.5506	<.0001
APR-DRG	'1614'	1	3.8683	0.2771	194.9419	<.0001
APR-DRG	'1621' to '1622'	1	1.9362	0.186	108.3727	<.0001
APR-DRG	'1623'	1	3.3585	0.1755	366.3713	<.0001
APR-DRG	'1624'	1	4.0058	0.1995	403.0216	<.0001
APR-DRG	'1631' to '1632'	1	1.5649	0.1831	73.0088	<.0001
APR-DRG	'1633'	1	3.2771	0.1847	314.8074	<.0001
APR-DRG	'1634'	1	4.3895	0.2137	421.7753	<.0001
APR-DRG	'1652'	1	0.7883	0.1739	20.5395	<.0001
APR-DRG	'1653'	1	2.3433	0.1639	204.2934	<.0001
APR-DRG	'1654'	1	3.5268	0.1744	409.1229	<.0001
APR-DRG	'1661'	1	0.5066	0.1746	8.4149	0.0037
APR-DRG	'1663'	1	2.5277	0.1814	194.1402	<.0001
APR-DRG	'1664'	1	3.733	0.2062	327.6303	<.0001
MDC	5	1	4.3742	0.1712	652.5993	<.0001
MDC	OTHER	1	2.6159	0.231	128.2859	<.0001
c-statistic	0.836					

Table 5. Risk Adjustment Coefficients for IQI #13— Craniotomy Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-4.3508	0.0978	1978.3487	<.0001
Age	18 to 24	1	-0.8163	0.1949	17.5386	<.0001
Age	25 to 59	1	-0.1597	0.0787	4.1142	0.0425
Age	65 to 85+	1	0.1261	0.0788	2.5638	0.1093
APR-DRG	'0212'	1	1.4101	0.0947	221.9279	<.0001
APR-DRG	'0213'	1	3.0032	0.0822	1336.081	<.0001
APR-DRG	'0214'	1	4.0545	0.0886	2092.0789	<.0001
APR-DRG	'0221' to '0222'	1	-0.5807	0.2005	8.3911	0.0038
APR-DRG	'0223'	1	1.4325	0.3499	16.7625	<.0001
APR-DRG	'0224'	1	3.5827	0.1528	549.8661	<.0001
APR-DRG	'0231' to '0232'	1	-1.2243	0.4154	8.687	0.0032
APR-DRG	'0233' to '0234'	1	1.2291	0.3931	9.7773	0.0018
APR-DRG	'0241' to '0242'	1	0.6438	0.1435	20.1296	<.0001
APR-DRG	'0243'	1	2.9958	0.2259	175.8772	<.0001
APR-DRG	'0244'	1	3.8637	0.2505	237.8197	<.0001
MDC	1	1	0.4832	0.4185	1.3329	0.2483
TRNSFER		1	0.1399	0.0688	4.1324	0.0421
c-statistic	0.865					

Table 6. Risk Adjustment Coefficients for IQI #14— Hip Replacement Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-7.7445	0.5881	173.4161	<.0001
Sex	Female	1	-0.5268	0.2494	4.4613	0.0347
Age	18 to 59	1	-0.2796	0.7318	0.146	0.7024
Age	65 to 85+	1	1.2089	0.5983	4.0827	0.0433
APR-DRG	'3013' to '3014'	1	3.4414	0.2791	152.0323	<.0001
MDC	8	1	5.5001	0.8189	45.1135	<.0001
MDC	Other	1	2.5543	1.0188	6.2858	0.0122
c-statistic	0.666					

Table 7. Risk Adjustment Coefficients for IQI #15— AMI Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-5.5309	0.1025	2912.8843	<.0001
Age	18 to 39	1	-0.5723	0.1438	15.8301	<.0001
Age	40 to 44	1	-0.7079	0.1302	29.5492	<.0001
Age	45 to 49	1	-0.2508	0.0847	8.777	0.0031
Age	50 to 54	1	-0.23	0.0716	10.3304	0.0013
Age	55 to 59	1	-0.1458	0.0644	5.1317	0.0235
Age	65 to 69	1	0.1264	0.0462	7.4857	0.0062
Age	80 to 84	1	0.123	0.0506	5.9012	0.0151
Age	85+	1	0.1959	0.0487	16.1528	<.0001
APR-DRG	'1611' to '1612'	1	1.1742	0.3682	10.1694	0.0014
APR-DRG	'1613' to '1614'	1	2.87	0.1589	326.1709	<.0001
APR-DRG	'1621' to '1622'	1	2.3699	0.253	87.7313	<.0001
APR-DRG	'1623'	1	3.9284	0.1762	497.1341	<.0001
APR-DRG	'1624'	1	4.6219	0.1993	537.5819	<.0001
APR-DRG	'1651' to '1652'	1	1.0558	0.1471	51.5343	<.0001
APR-DRG	'1653'	1	2.6729	0.1227	474.6562	<.0001
APR-DRG	'1654'	1	3.8062	0.1407	731.6044	<.0001
APR-DRG	'1731' to '1734'	1	3.8338	0.1753	478.5413	<.0001
APR-DRG	'1742'	1	1.4064	0.1109	160.7569	<.0001
APR-DRG	'1743'	1	3.035	0.1096	766.6736	<.0001
APR-DRG	'1744'	1	4.4992	0.1026	1922.9611	<.0001
APR-DRG	'1901'	1	1.4033	0.1255	125.084	<.0001
APR-DRG	'1902'	1	2.3416	0.1028	519.1431	<.0001
APR-DRG	'1903'	1	3.3619	0.0984	1167.0483	<.0001
APR-DRG	'1904'	1	4.9943	0.0982	2585.3541	<.0001
MDC	5	1	3.5402	0.1069	1096.7232	<.0001
TRNSFER		1	-0.2032	0.0352	33.3572	<.0001
c-statistic	0.84					

Table 8. Risk Adjustment Coefficients for IQI #16— Congestive Heart Failure (CHF) Morality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-4.7839	0.0823	3378.3157	<.0001
Sex	Female	1	-0.0911	0.0209	19.0002	<.0001
Age	18 to 49	1	-0.2514	0.0732	11.804	0.0006
Age	50 to 54	1	-0.2272	0.0827	7.5415	0.006
Age	55 to 59	1	-0.2825	0.0773	13.3418	0.0003
Age	65 to 84	1	0.1631	0.0504	10.469	0.0012
Age	85+	1	0.7243	0.0515	197.8711	<.0001
APR-DRG	'1611'	1	-1.1553	0.3586	10.3805	0.0013
APR-DRG	'1612'	1	-0.6313	0.1934	10.6579	0.0011
APR-DRG	'1613'	1	0.7929	0.1423	31.039	<.0001
APR-DRG	'1614'	1	1.8894	0.2073	83.0999	<.0001
APR-DRG	'1621' to '1622'	1	2.1927	0.28	61.3336	<.0001
APR-DRG	'1623'	1	2.6975	0.1607	281.9045	<.0001
APR-DRG	'1624'	1	3.6497	0.266	188.2639	<.0001
APR-DRG	'1751' to '1753'	1	0.6797	0.1588	18.3176	<.0001
APR-DRG	'1754' to '1753'	1	2.8205	0.1979	203.1824	<.0001
APR-DRG	'1801'	1	1.8301	0.4625	15.6542	<.0001
APR-DRG	'1802'	1	1.6692	0.2363	49.9107	<.0001
APR-DRG	'1803'	1	1.6408	0.194	71.5463	<.0001
APR-DRG	'1804'	1	2.7686	0.2335	140.5392	<.0001
APR-DRG	'1911' to '1912'	1	-0.4695	0.1509	9.6757	0.0019
APR-DRG	'1913'	1	1.2774	0.1231	107.6451	<.0001
APR-DRG	'1914'	1	2.9823	0.1317	512.9154	<.0001
APR-DRG	'1942'	1	0.6476	0.0657	97.033	<.0001
APR-DRG	'1943'	1	1.8847	0.0648	846.9303	<.0001
APR-DRG	'1944'	1	3.2483	0.0667	2372.9607	<.0001
MDC	Other	1	2.2905	0.0758	912.3289	<.0001
TRANSFER		1	1.1037	0.0448	607.7695	<.0001
NOPOUB04		1	-0.1627	0.0384	17.9336	<.0001
c-statistic	0.787					

Table 9. Risk Adjustment Coefficients for IQI #17— Acute Stroke Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-4.7779	0.0769	3858.0353	<.0001
Sex	Female	1	0.1078	0.0211	26.1546	<.0001
Age	18 to 59	1	-0.0757	0.046	2.7121	0.0996
Age	65 to 84	1	0.1175	0.0432	7.4105	0.0065
Age	85+	1	0.5668	0.0465	148.6231	<.0001
APR-DRG	'0211'	1	1.7643	0.1294	185.9403	<.0001
APR-DRG	'0212'	1	2.4825	0.0973	651.6229	<.0001
APR-DRG	'0213'	1	3.7058	0.0698	2816.9317	<.0001
APR-DRG	'0214'	1	4.9984	0.0836	3571.2592	<.0001
APR-DRG	'0221'	1	2.674	0.748	12.7817	0.0004
APR-DRG	'0222'	1	3.8615	0.8397	21.1481	<.0001
APR-DRG	'0223' to '0224'	1	4.1158	0.1545	709.9606	<.0001
APR-DRG	'0231' to '0232'	1	1.4175	0.7233	3.8409	0.05
APR-DRG	'0233'	1	2.4873	1.0574	5.533	0.0187
APR-DRG	'0234'	1	5.1445	0.9157	31.5641	<.0001
APR-DRG	'0241'	1	1.8727	0.2058	82.7812	<.0001
APR-DRG	'0242'	1	1.2825	0.1443	78.9862	<.0001
APR-DRG	'0243'	1	2.6817	0.1785	225.6238	<.0001
APR-DRG	'0244'	1	4.365	0.2043	456.556	<.0001
APR-DRG	'0261' to '0263'	1	0.657	0.2763	5.6526	0.0174
APR-DRG	'0264'	1	3.2603	0.4267	58.3851	<.0001
APR-DRG	'0441'	1	2.4298	0.0839	838.6868	<.0001
APR-DRG	'0442'	1	2.4859	0.0657	1431.897	<.0001
APR-DRG	'0443'	1	3.7908	0.068	3105.1918	<.0001
APR-DRG	'0444'	1	5.7568	0.0659	7636.1247	<.0001
APR-DRG	'0452'	1	1.319	0.0636	430.6596	<.0001
APR-DRG	'0453'	1	2.5344	0.0655	1497.4027	<.0001
APR-DRG	'0454'	1	4.5409	0.065	4887.2957	<.0001
MDC	OTHER	1	2.9747	0.076	1530.5147	<.0001
NOPOUB04		1	-0.1218	0.0391	9.6938	0.0018
c-statistic	0.867					

Table 10. Risk Adjustment Coefficients for IQI #18— Gastrointestinal Hemorrhage Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-4.9398	0.1126	1924.0822	<.0001
Age	18 to 59	1	-0.2965	0.079	14.088	0.0002
Age	65 to 85+	1	-0.0774	0.071	1.1897	0.2754
APR-DRG	'2201'	1	2.1735	0.2815	59.5954	<.0001
APR-DRG	'2202'	1	3.1192	0.1674	347.1631	<.0001
APR-DRG	'2203'	1	3.6192	0.1693	456.9285	<.0001
APR-DRG	'2204'	1	4.2114	0.1786	556.042	<.0001
APR-DRG	'2211'	1	1.6253	0.2517	41.689	<.0001
APR-DRG	'2212'	1	2.6266	0.1705	237.2128	<.0001
APR-DRG	'2213'	1	3.1793	0.1829	302.2699	<.0001
APR-DRG	'2214'	1	3.9948	0.2133	350.7657	<.0001
APR-DRG	'2411' to '2413'	1	0.5478	0.1063	26.5532	<.0001
APR-DRG	'2414'	1	3.3789	0.1228	757.4054	<.0001
APR-DRG	'2421' to '2423'	1	0.8485	0.1435	34.9789	<.0001
APR-DRG	'2424'	1	3.759	0.1871	403.6886	<.0001
APR-DRG	'2441' to '2442'	1	-0.6038	0.1569	14.8119	0.0001
APR-DRG	'2443'	1	1.3852	0.1675	68.351	<.0001
APR-DRG	'2444'	1	2.805	0.2217	160.1017	<.0001
APR-DRG	'2532'	1	1.1375	0.1061	114.9845	<.0001
APR-DRG	'2533'	1	2.6386	0.1027	659.8818	<.0001
APR-DRG	'2534'	1	3.966	0.1118	1257.6056	<.0001
APR-DRG	'2541' to '2534'	1	0.9522	0.1252	57.8663	<.0001
APR-DRG	'2544'	1	3.7078	0.1967	355.1874	<.0001
MDC	OTHER	1	2.0508	0.1154	315.7461	<.0001
TRNSFER		1	0.6498	0.1009	41.4807	<.0001
c-statistic	0.801					

Table 11. Risk Adjustment Coefficients for IQI #19— Hip Fracture Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-4.7106	0.1757	718.5872	<.0001
Sex	Female	1	-0.618	0.0482	164.6048	<.0001
Age	70 to 84	1	0.2934	0.1345	4.757	0.0292
Age	85+	1	0.8633	0.133	42.1391	<.0001
APR-DRG	'3011' to '3012'	1	0.6775	0.1108	37.3896	<.0001
APR-DRG	'3013'	1	2.0114	0.1247	260.3111	<.0001
APR-DRG	'3014'	1	3.42	0.1619	446.0751	<.0001
APR-DRG	'3082'	1	0.8711	0.1083	64.6453	<.0001
APR-DRG	'3083'	1	1.6901	0.1218	192.6662	<.0001
APR-DRG	'3084'	1	3.3395	0.149	502.5498	<.0001
APR-DRG	'3401'	1	1.6847	0.172	95.9664	<.0001
APR-DRG	'3402'	1	2.4317	0.1232	389.4181	<.0001
APR-DRG	'3403'	1	3.6119	0.1282	793.2462	<.0001
APR-DRG	'3404'	1	4.897	0.1803	737.5389	<.0001
MDC	8	1	2.9954	0.2052	213.1684	<.0001
MDC	24	1	2.0906	0.1527	187.3945	<.0001
TRNSFER		1	-0.6047	0.1426	17.9742	<.0001
NOPOUB04		1	-0.2743	0.0835	10.7754	0.001
c-statistic	0.781					

Table 12. Risk Adjustment Coefficients for IQI #20— Pneumonia Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-5.2951	0.0727	5298.8772	<.0001
Sex	Female	1	-0.086	0.0204	17.7729	<.0001
Age	18 to 24	1	-1.3808	0.1826	57.175	<.0001
Age	25 to 29	1	-0.7709	0.1657	21.6467	<.0001
Age	30 to 34	1	-0.902	0.1728	27.2474	<.0001
Age	35 to 39	1	-0.7524	0.1348	31.1691	<.0001
Age	40 to 44	1	-0.6298	0.1067	34.8258	<.0001
Age	45 to 49	1	-0.4094	0.0839	23.805	<.0001
Age	50 to 54	1	-0.2398	0.0741	10.4561	0.0012
Age	55 to 59	1	-0.1395	0.068	4.2135	0.0401
Age	80 to 84	1	0.1353	0.0472	8.204	0.0042
Age	85+	1	0.6544	0.0486	181.072	<.0001
APR-DRG	'1211'		2.3317	0.2424	92.4967	<.0001
APR-DRG	'1212'		3.0907	0.2437	160.8801	<.0001
APR-DRG	'1213'		3.7813	0.1906	393.5565	<.0001
APR-DRG	'1214'		4.4652	0.3292	183.9698	<.0001
APR-DRG	'1301'		4.1444	0.13	1016.692	<.0001
APR-DRG	'1302'		4.4796	0.0861	2704.0825	<.0001
APR-DRG	'1303' to '1304		4.7612	0.0739	4149.821	<.0001
APR-DRG	'1371'		0.6835	0.2058	11.028	0.0009
APR-DRG	'1372'		1.9055	0.0823	535.9019	<.0001
APR-DRG	'1373'		2.8942	0.0765	1430.6224	<.0001
APR-DRG	'1374'		3.8094	0.0855	1986.5583	<.0001
APR-DRG	'1392'		1.5301	0.0639	572.8548	<.0001
APR-DRG	'1393'		2.8703	0.0638	2023.8499	<.0001
APR-DRG	'1394'		4.106	0.069	3545.5669	<.0001
MDC	4		3.2777	0.076	1859.0451	<.0001
MDC	25		1.9735	0.1451	184.8627	<.0001
TRNSFER		1	0.7565	0.0453	278.5969	<.0001
c-statistic	0.82					

Table 13. Risk Adjustment Coefficients for IQI #30— PTCA Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-8.103	0.1892	1833.6033	<.0001
Sex	Female	1	0.1963	0.0445	19.4537	<.0001
Age	40 to 59	1	-0.1966	0.0882	4.9698	0.0258
Age	65 to 74	1	0.2213	0.0838	6.9696	0.0083
Age	75 to 79	1	0.494	0.089	30.7954	<.0001
Age	80 to 84	1	0.7121	0.0896	63.1971	<.0001
Age	85+	1	0.9988	0.094	112.8227	<.0001
XCV7	'1653' to '1654'	1	5.4367	0.1979	754.6098	<.0001
XCV8	'1741'	1	2.1583	0.1847	136.5049	<.0001
XCV9	'1742'	1	3.4075	0.169	406.3311	<.0001
XCV10	'1743'	1	4.987	0.1681	880.0752	<.0001
XCV11	'1744'	1	6.5069	0.1634	1586.6957	<.0001
XCV12	'1752'	1	1.6049	0.1908	70.7398	<.0001
XCV13	'1753'	1	3.5558	0.1879	358.1517	<.0001
XCV14	'1754'	1	5.6858	0.1825	970.5981	<.0001
MDC	4	1	5.1047	0.1989	658.7486	<.0001
MDC	5	1	4.6865	0.1782	691.5277	<.0001
MDC	8	1	5.0961	0.2476	423.7293	<.0001
MDC	18	1	5.5861	0.2457	516.8031	<.0001
MDC	Other	1	4.8713	0.1879	672.1156	<.0001
TRNSFER		1	-0.2195	0.0606	13.1348	0.0003
NOPOUB04		1	0.2302	0.0859	7.1811	0.0074
c-statistic	0.926					

Table 14. Risk Adjustment Coefficients for IQI #31— Carotid Endarterectomy Mortality

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-6.7639	0.3273	427.0058	<.0001
Age	18 to 59	1	-0.2683	0.4254	0.3978	0.5282
Age	65 to 85+	1	0.2311	0.2984	0.5999	0.4386
APR-DRG	'0242' to '0244'	1	1.4449	0.2435	35.2038	<.0001
MDC	1	1	4.8932	0.4347	126.6903	<.0001
MDC	5	1	3.3153	0.2493	176.8522	<.0001
MDC	OTHER	1	3.1313	0.3788	68.3355	<.0001
c-statistic	0.791					

Table 15. Risk Adjustment Coefficients for IQI #32— AMI Mortality without Transfer

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-5.547	0.1165	2265.8252	<.0001
Age	18 to 39	1	-0.5633	0.1555	13.1163	0.0003
Age	40 to 44	1	-0.8479	0.1518	31.2114	<.0001
Age	45 to 49	1	-0.2378	0.092	6.6777	0.0098
Age	50 to 54	1	-0.1965	0.0774	6.4394	0.0112
Age	55 to 59	1	-0.1529	0.0705	4.702	0.0301
Age	65 to 84	1	0.1024	0.0494	4.2935	0.0383
Age	85+	1	0.1602	0.0526	9.2791	0.0023
APR-DRG	'1611' to '1614'		2.3049	0.1885	149.5439	<.0001
APR-DRG	'1621' to '1622'		2.6022	0.2722	91.4184	<.0001
APR-DRG	'1623'		4.0904	0.1976	428.382	<.0001
APR-DRG	'1624'		4.5735	0.2273	405.0203	<.0001
APR-DRG	'1651' to '1652'		1.0541	0.1702	38.3341	<.0001
APR-DRG	'1653'		2.6411	0.1405	353.2873	<.0001
APR-DRG	'1654'		3.7736	0.1611	548.9976	<.0001
APR-DRG	'1731' to '1734		3.8506	0.1993	373.1832	<.0001
APR-DRG	'1742'		1.4819	0.1256	139.1057	<.0001
APR-DRG	'1743'		3.0768	0.1246	609.7831	<.0001
APR-DRG	'1744'		4.5534	0.1169	1516.4966	<.0001
APR-DRG	'1901'		1.4896	0.1395	114.0264	<.0001
APR-DRG	'1902'		2.3685	0.1167	411.6313	<.0001
APR-DRG	'1903'		3.4042	0.112	923.1996	<.0001
APR-DRG	'1904'		5.0095	0.1121	1997.3244	<.0001
MDC	5		3.7358	0.1237	911.7123	<.0001
c-statistic	0.831					

Table A.1. Population Age Categories

POPCAT	AGE RANGE
1	low - 4
2	5 - 9
3	10 - 14
4	15 - 17
5	18 - 24
6	25 - 29
7	30 - 34
8	35 - 39
9	40 - 44
10	45 - 49
11	50 - 54
12	55 - 59
13	60 - 64
14	65 - 69
15	70 - 74
16	75 - 79
17	80 - 84
18	85 - high

Table A.2. All Patient Refined Diagnosis Related Groups (APR-DRG) Labels v20.0

DRG	M/S	MDC	DESCRIPTION	D
1	P		LIVER TRANSPLANT	
2	P		HEART &IOR LUNG TRANSPLANT	
3	P		BONE MARROW TRANSPLANT	
4	P		TRACHEOSTOMY EXCEPT FOR FACE,MOUTH & NECK DIAGNOSES	
5	P		TRACHEOSTOMY FOR FACE,MOUTH & NECK DIAGNOSES	
20	P	1	CRANIOTOMYFORTRAUMA	
21	P	1	CRANIOTOMY EXCEPT FOR TRAUMA	
22	P	1	VENTRICULAR SHUNT PROCEDURES	
23	P	1	SPINAL PROCEDURES	
24	P	1	EXTRACRANIALVASCULARPROCEDURES	
25	P	1	NERVOUS SYSTEM PROC FOR PERIPHERAL NERVE DISORDERS	
26	P	1	NERVOUS SYST PROC FOR CRANIAL NERV & 0TH NERV SYS DISORD	
40	M	1	SPINAL DISORDERS & INJURIES	
41	M	1	NERVOUS SYSTEM NEOPLASMS	
42	M	1	DEGENERATIVE NERVOUS SYSTEM DISORDERS	
43	M	1	MULTIPLE SCLEROSIS & CEREBELLAR ATAXIA	
44	M	1	INTRACRANIAL HEMORRHAGE	
45	M	1	CVAWINFARCT	
46	M	1	NONSPECIFIC CVA & PRECEREBRAL OCCLUSION W/O INFARCT	
47	M	1	TRANSIENT ISCHEMIA	
48	M	1	CRANIAL & PERIPHERAL NERVE DISORDERS	
49	M	1	BACTERIAL & TUBERCULOUS INFECTIONS OF NERVOUS SYSTEM	
50	M	1	NON-BACTERIAL INFECTIONS OF NERVOUS SYSTEM EXC VIRAL MENINGITIS	
51	M	1	VIRAL MENINGITIS	
52	M	1	NONTRAUMATIC STUPOR & COMA	
53	M	1	SEIZURE	
54	M	1	MIGRAINE&OTHERHEADACHES	
55	M	1	HEAD TRAUMA W COMA >1 HR OR HEMORRHAGE	
56	M	1	SKULL FRACTURE & SPEC INTRACRANIAL INJURY, COMA <1 HR OR NO COMA	
57	M	1	CONCUSSION,UNSPEC INTRACRANIAL INJURY, COMA <1 HR OR NO COMA	
58	M	1	OTHER DISORDERS OF NERVOUS SYSTEM	
70	P	2	ORBITAL PROCEDURES	
71	P	2	INTRAOCULAR PROCEDURES EXCEPTLENS	
72	P	2	EXTRAOCULAR PROCEDURES EXCEPT ORBIT	
73	P	2	LENS PROCEDURES W OR W/O VITRECTOMY	
80	M	2	ACUTE MAJOR EYE INFECTIONS	
81	M	2	NEUROLOGICAL EYE DISORDERS	
82	M	2	OTHER DISORDERS OF THE EYE	
90	P	3	MAJOR LARYNX & TRACHEAL PROCEDURES EXCEPT TRACHEOSTOMY	
91	P	3	OTHER MAJOR HEAD & NECK PROCEDURES	
92	P	3	FACIAL BONE PROCEDURES EXCEPT MAJOR HEAD & NECK	
93	P	3	SINUS & MASTOID PROCEDURES	
94	P	3	MOUTH PROCEDURES	
95	P	3	CLEFTLIP& PALATE REPAIR	
96	P	3	SIALOADENECTOMY & SALIVARY GLAND PROCEDURES	
97	P	3	TONSILLECTOMY &ADENOIDECTOMY PROCEDURES	
98	P	3	OTHER EAR, NOSE, MOUTH & THROAT PROCEDURES	
110	M	3	EAR, NOSE, MOUTH & THROAT MALIGNANCY	

111	M	3	DYSEQUILIBRIUM
112	M	3	EPISTAXIS
113	M	3	EPIGLOTTITIS,OTITIS MEDIA,URI & LARYNGOTRACHEITIS
114	M	3	DENTAL&ORALDISEASE
115	M	3	OTHER EAR, NOSE, MOUTH & THROAT DIAGNOSES
120	P	4	MAJOR RESPIRATORY PROCEDURES
121	P	4	NON-MAJOR RESPIRATORY PROCEDURES
122	P	4	OTHER RESPIRATORYSYSTEM PROCEDURES
130	M	4	RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT 96+ HOURS
131	M	4	CYSTIC FIBROSIS
132	M	4	BPD & 0TH CHRONIC RESPIRATORY DIS ARISING IN PERINATAL PERIOD
133	M	4	PULMONARY EDEMA & RESPIRATORY FAILURE
134	M	4	PULMONARY EMBOLISM
135	M	4	MAJORCHESTTRAUMA
136	M	4	RESPIRATORY MALIGNANCY
137	M	4	RESPIRATORY INFECTIONS & INFLAMMATIONS
138	M	4	RSV PNEUMONIA & WHOOPING COUGH
139	M	4	SIMPLE PNEUMONIA
140	M	4	CHRONIC OBSTRUCTIVE PULMONARY DISEASE
141	M	4	ASTHMA&BRONCHIOLITIS
142	M	4	INTERSTITIAL LUNG DISEASE
143	M	4	PNEUMOTHORAX & PLEURAL EFFUSION
144	M	4	RESPIRATORY SYSTEM SIGNS, SYMPTOMS & OTHER DIAGNOSES
160	P	5	MAJOR CARDIOTHORACIC REPAIR OF HEART ANOMALY
161	P	5	CARDIAC DEFIBRILLATOR IMPLANT
162	P	5	CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION
163	P	5	CARDIAC VALVE PROCEDURES W/O CARDIAC CATHETERIZATION
164	P	5	CORONARY BYPASS WMALFUNCTIONING CORONARY BYPASS GRAFT
165	P	5	CORONARY BYPASS W/O MALFUNCTIONING CORONARY BYPASS W CARDIAC CATH
166	P	5	CORONARY BYPASS W/O MALFUNCTIONING CORONARY BYPASS W/O CARDIAC CATH
167	P	5	OTHERCARDIOTHORACICPROCEDURES
168	P	5	MAJORTHORACICVASCULARPROCEDURES
169	P	5	MAJORABDOMINALVASCULARPROCEDURES
170	P	5	PERMANENT CARDIAC PACEMAKER IMPLANT W AMI,HEART FAILURE OR SHOCK
171	P	5	PERM CARDIAC PACEMAKER IMPLANT W/O AMI, HEART FAILURE OR SHOCK
172	P	5	AMPUTATION FOR CIRC SYSTEM DISORDER EXCEPT UPPER LIMB & TOE
173	P	5	OTHERVASCULARPROCEDURES
174	P	5	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WAMI
175	P	5	PERCUTANEOUS CARDIOVASCULAR PROCEDURES W/O AMI
176	P	5	CARDIAC PACEMAKER & DEFIBRILLATOR DEVICE REPLACEMENT
177	P	5	CARDIAC PACEMAKER & DEFIBRILLATOR REVISION EXCEPT DEVICE REPLACEMENT
178	P	5	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS
179	P	5	VEIN LIGATION & STRIPPING
180	P	5	OTHER CIRCULATORY SYSTEM PROCEDURES
190	M	5	CIRCULATORY DISORDERS WAMI
191	M	5	CARDIAC CATHETERIZATION W CIRC DISORD EXC ISCHEMIC HEART DISEASE
192	M	5	CARDIAC CATHETERIZATION FOR ISCHEMIC HEART DISEASE
193	M	5	ACUTE&SUBACUTEENDOCARDITIS
194	M	5	HEART FAILURE
195	M	5	DEEPVEINTHROMBOPHLEBITIS

196	M	5	CARDIACARREST,UNEXPLAINED
197	M	5	PERIPHERAL&OTHERVASCULARDISORDERS
198	M	5	ATHEROSCLEROSIS
199	M	5	HYPERTENSION
200	M	5	CARDIAC CONGENITAL & VALVULAR DISORDERS
201	M	5	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS
202	M	5	ANGINA PECTORIS
203	M	5	CHEST PAIN
204	M	5	SYNCOPE & COLLAPSE
205	M	5	CARDIOMYOPATHY
206	M	5	MALFUNCTION,REACTION & COMP OF CARDIAC OR VASC DEVICE OR PROC
207	M	5	OTHER CIRCULATORY SYSTEM DIAGNOSES
220	P	6	MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES
221	P	6	MAJOR SMALL & LARGE BOWEL PROCEDURES
222	P	6	MINOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES
223	P	6	MINOR SMALL & LARGE BOWEL PROCEDURES
224	P	6	PERITONEALADHESIOLYSIS
225	P	6	APPENDECTOMY
226	P	6	ANAL & STOMAL PROCEDURES
227	P	6	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL
228	P	6	INGUINAL & FEMORAL HERNIA PROCEDURES
229	P	6	OTHER DIGESTIVE SYSTEM PROCEDURES
240	M	6	DIGESTIVE MALIGNANCY
241	M	6	PEPTIC ULCER & GASTRITIS
242	M	6	MAJOR ESOPHAGEAL DISORDERS
243	M	6	OTHER ESOPHAGEAL DISORDERS
244	M	6	DIVERTICULITIS & DIVERTICULOSIS
245	M	6	INFLAMMATORY BOWEL DISEASE
246	M	6	G.I. VASCULAR INSUFFICIENCY
247	M	6	G.I. OBSTRUCTION
248	M	6	MAJOR G.I. BACTERIAL INFECTIONS
249	M	6	NONBACTERIAL GASTROENTERITIS & ABDOMINAL PAIN
250	M	6	OTHER DIGESTIVE SYSTEM DIAGNOSES
260	P	7	PANCREAS, LIVER & SHUNT PROCEDURES
261	P	7	MAJOR BILIARY TRACT PROCEDURES
262	P	7	CHOLECYSTECTOMY EXCEPT LAPAROSCOPIC
263	P	7	LAPAROSCOPIC CHOLECYSTECTOMY
264	P	7	OTHER HEPATOBILIARY & PANCREAS PROCEDURES
280	M	7	CIRRHOSIS&ALCOHOLICHEPATITIS
281	M	7	MALIGNANCY OF HEPATOBILIARY SYSTEM & PANCREAS
282	M	7	DISORDERS OF PANCREAS EXCEPT MALIGNANCY
283	M	7	DISORDERS OF LIVER EXCEPT MALIG, CIRRHOSIS OR ALCOHOLIC HEPATITIS
284	M	7	DISORDERS OF THE BILIARY TRACT
300	P	8	BILATERAL & MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY
301	P	8	MAJOR JOINT & LIMB REATTACH PROC OF LOWER EXTREMITY FOR TRAUMA
302	P	8	MAJOR JOINT & LIMB REATTACH PROC OF LOWER EXTREM EXC FOR TRAUMA
303	P	8	DORSAL & LUMBAR FUSION PROC FOR CURVATURE OF BACK
304	P	8	DORSAL & LUMBAR FUSION PROC EXCEPT FOR CURVATURE OF BACK
305	P	8	AMPUTATION FOR MUSCULOSKELET SYSTEM & CONN TISSUE DISORDERS
306	P	8	MAJOR JOINT & LIMB REATTACHMENT PROCEDURES OF UPPER EXTREMITY

307	P	8	CRANIAL & FACIAL BONE RECONSTRUCTIVE PROCEDURES
308	P	8	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT FOR TRAUMA
309	P	8	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT FOR NONTRAUMA
310	P	8	BACK & NECK PROCEDURES EXCEPT DORSAL & LUMBAR FUSION
311	P	8	SKIN GRAFT & WND DEBRID FOR OPEN WND,MS & CONN TISS DIS,EXC HAND
312	P	8	SKIN GRFT & WND DEBRID EXC OPN WND,FOR MS & CONN TIS DIS,EXC HAND
313	P	8	KNEE&LOWERLEGPROCEDURESEXCEPTFOOT
314	P	8	FOOT PROCEDURES
315	P	8	SHOULDER, ELBOW& FOREARM PROCEDURES
316	P	8	HAND&WRISTPROCEDURES
317	P	8	SOFTTISSUEPROCEDURES
318	P	8	REMOVAL OF INTERNAL FIXATION DEVICE
319	P	8	LOCAL EXCISION OF MUSCULOSKELETAL SYSTEM
320	P	8	OTHER MUSCULOSKELETEL SYSTEM & CONNECTIVE TISSUE PROCEDURES
340	M	8	FRACTURES OF FEMUR
341	M	8	FRACTURE OF PELVIS OR DISLOCATION OF HIP
342	M	8	FRACTURE OR DISLOCATION EXCEPT FEMUR & PELVIS
343	M	8	MUSCULOSKELETAL & CONN TISS MALIGNANCY & PATHOLOGICAL FRACTURES
344	M	8	OSTEOMYELITIS
345	M	8	SEPTIC ARTHRITIS
346	M	8	CONNECTIVE TISSUE DISORDERS
347	M	8	MEDICALBACKPROBLEMS
348	M	8	OTHERBONE DISEASES
349	M	8	MALFUNCTION, REACTION & COMP OF ORTHOPEDIC DEVICE OR PROCEDURE
350	M	8	MUSCULOSKELETAL SIGNS,SYMPTOMS,SPRAINS & MINOR INFLAMMATORY DIS
351	M	8	OTHER MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE DIAGNOSES
360	P	9	SKIN GRAFT & WOUND DEBRID FOR SKIN ULCER & CELLULITIS
361	P	9	SKIN GRAFT & WOUND DEBRID EXC FOR SKIN ULCER & CELLULITIS
362	P	9	MASTECTOMY PROCEDURES
363	P	9	BREAST PROCEDURES EXCEPT MASTECTOMY
364	P	9	OTHER SKIN, SUBCUTANEOUS TISSUE & BREAST PROCEDURES
380	M	9	SKIN ULCERS
381	M	9	MAJOR SKIN DISORDERS
382	M	9	MALIGNANT BREAST DISORDERS
383	M	9	CELLULITIS
384	M	9	TRAUMA TO THE SKIN, SUBCUTANEOUS TISSUE & BREAST
385	M	9	OTHER SKIN & BREAST DISORDERS
400	P	10	AMPUTAT OF LOWER LIMB FOR ENDOCRINE, NUTRIT & METABOLIC DISORDERS
401	P	10	ADRENAL & PITUITARY PROCEDURES
402	P	10	SKIN GRAFT & WOUND DEBRID FOR ENDOC,NUTRIT & METAB DISORDERS
403	P	10	PROCEDURES FOR OBESITY
404	P	10	THYROID, PARATHYROID&THYROGLOSSAL PROCEDURES
405	P	10	OTHER ENDOCRINE, NUTRITITIONAL & METABOLIC PROCEDURES
420	M	10	DIABETES
421	M	10	NUTRITIONAL & MISC METABOLIC DISORDERS
422	M	10	HYPOVOLEMIA&ELECTROLYTEDISORDERS
423	M	10	INBORN ERRORS OF METABOLISM
424	M	10	OTHER ENDOCRINE DISORDERS
440	P	11	KIDNEY TRANSPLANT
441	P	11	MAJOR BLADDER PROCEDURES

442	P	11	KIDNEY & URINARY TRACT PROCEDURES FOR MALIGNANCY
443	P	11	KIDNEY & URINARY TRACT PROCEDURES FOR NONMALIGNANCY
444	P	11	CREATE, REVISE, REMOVE RENAL ACCESS DEVICE
445	P	11	MINORBLADDERPROCEDURES
446	P	11	URETHRAL&TRANSURETHRALPROCEDURES
447	P	11	OTHER KIDNEY& URINARY TRACT PROCEDURES
460	M	11	RENAL FAILURE
461	M	11	KIDNEY & URINARY TRACT MALIGNANCY
462	M	11	NEPHRITIS
463	M	11	KIDNEY&URINARYTRACTINFECTIONS
464	M	11	URINARY STONES W ESW LITHOTRIPSY
465	M	11	URINARY STONES W/O ESW LITHOTRIPSY
466	M	11	MALFUNCTIONS,REACTIONS & COMP OF GU DEVICE,GRAFT OR TRANSPLANT
467	M	11	KIDNEY & URINARY TRACT SIGNS & SYMPTOMS
468	M	11	OTHER KIDNEY & URINARY TRACT DIAGNOSES
480	P	12	MAJOR MALE PELVIC PROCEDURES
481	P	12	PENIS PROCEDURES
482	P	12	TRANSURETHRAL PROSTATECTOMY
483	P	12	TESTES PROCEDURES
484	P	12	OTHER MALE REPRODUCTIVE SYSTEM PROCEDURES
500	M	12	MALIGNANCY, MALE REPRODUCTIVE SYSTEM
501	M	12	MALE REPRODUCTIVE SYSTEM DIAGNOSES EXCEPT MALIGNANCY
510	P	13	PELVIC EVISCERATION, RADICAL HYSTERECTECTOMY & RADICAL VULVECTOMY
511	P	13	UTERINE &ADNEXA PROCEDURES FOROVARIAN &ADNEXAL MALIGNANCY
512	P	13	UTERINE &ADNEXA PROCEDURES FOR NON-OVARIAN & NON-ADNEXAL MALIG
513	P	13	UTERINE & ADNEXA PROCEDURES FOR CA IN SITU & NONMALIGNANCY
514	P	13	FEMALE REPRODUCTIVE SYSTEM RECONSTRUCTIVE PROCEDURES
515	P	13	VAGINA, CERVIX&VULVAPROCEDURES
516	P	13	LAPAROSCOPY&TUBALINTERRUPTION
517	P	13	D&C&CONIZATION
518	P	13	OTHER FEMALE REPRODUCTIVE SYSTEM PROCEDURES
530	M	13	FEMALE REPRODUCTIVE SYSTEM MALIGNANCY
531	M	13	FEMALE REPRODUCTIVE SYSTEM INFECTIONS
532	M	13	MENSTRUAL & OTHER FEMALE REPRODUCTIVE SYSTEM DISORDERS
540	P	14	CESAREAN DELIVERY
541	P	14	VAGINAL DELIVERY W STERILIZATION &/OR D&C
542	P	14	VAGINAL DELIVERY W PROC EXCEPT STERILIZATION &/OR D&C
543	P	14	POSTPARTUM & POST ABORTION DIAGNOSES W PROCEDURE
544	P	14	ABORTION W D&C, ASPIRATION CURETTAGE OR HYSTEROTOMY
560	M	14	VAGINAL DELIVERY
561	M	14	POSTPARTUM & POST ABORTION DIAGNOSES W/O PROCEDURE
562	M	14	ECTOPIC PREGNANCY
563	M	14	THREATENED ABORTION
564	M	14	ABORTION W/O D&C, ASPIRATION CURETTAGE OR HYSTEROTOMY
565	M	14	FALSE LABOR
566	M	14	OTHER ANTEPARTUM DIAGNOSES
580	M	15	NEONATE,TRANSFERRED<5DAYSOLD,NOTBORN HERE
581	M	15	NEONATE, TRANSFERRED <5 DAYSOLD, BORN HERE
582	P	15	NEONATE,WORGANTRANSPLANT
583	P	15	NEONATE,WECMO

590	P	15	NEONATE, BIRTHWT <750GW MAJOR PROCEDURE
591	M	15	NEONATE, BIRTHWT<750GW/OMAJORPROCEDURE
592	P	15	NEONATE, BIRTHWT 750G-999G W MAJOR PROCEDURE
593	M	15	NEONATE, BIRTHWT 750G-999G W/O MAJOR PROCEDURE
600	P	15	NEONATE, BIRTHWT 1000-1499GWMAJOR PROCEDURE
601	M	15	NEONATE, BIRTHWT 1000-1499G WMAJORANOM OR HEREDITARY CONDITION
602	M	15	NEONATE, BIRTHWT 1000-1499GW RESPIRATORY DISTRESS SYNDROME
603	M	15	OTHER NEONATE, BIRTHWT 1000-1499G
610	P	15	NEONATE, BIRTHWT 1500-1999GW MAJOR PROCEDURE
611	M	15	NEONATE, BIRTHWT 1500-1999G W MAJOR ANOM OR HEREDITARY CONDITION
612	M	15	NEONATE, BIRTHWT 1500-1999GW RESPIRATORY DISTRESS SYNDROME
613	M	15	NEONATE, BIRTHWT 1500-1999G W CONGENITAL OR PERINATAL INFECTIONS
614	M	15	OTHER NEONATE, BIRTHWT 1500-1999G
620	P	15	NEONATE, BIRTHWT2000-2499G WMAJOR PROCEDURE
621	M	15	NEONATE, BIRTHWT2000-2499G W MAJOR ANOM OR HEREDITARY CONDITION
622	M	15	NEONATE, BIRTHWT 2000-2499GW RESPIRATORY DISTRESS SYNDROME
623	M	15	NEONATE, BIRTHWT 2000-2499G W CONGENITAL OR PERINATAL INFECTIONS
624	M	15	NEONATE,BWT 2000-2499G NOT BORN HERE
625	M	15	NEONATE, BIRTHWT 2000-2499G, BORN HERE, W OTHER SIGNIF CONDTN
626	M	15	NEONATE, BWT2000-2499G,BORN HERE, NORMAL NB & NB WOTHER PROB
630	P	15	NEONATE, BIRTHWT>2499GWMAJORCARDIOVASCPROCEDURE
631	P	15	NEONATE, BIRTHWT >2499GW OTHER MAJOR PROCEDURE
632	P	15	NEONATE, BIRTHWT >2499GWOTHER PROCEDURE
633	M	15	NEONATE, BIRTHWT >2499GW MAJOR ANOMALY OR HEREDITARY CONDITION
634	M	15	NEONATE, BIRTHWT >2499GW RESPIRATORY DISTRESS SYNDROME
635	M	15	NEONATE, BIRTHWT >2499G WASPIRATION SYNDROME
636	M	15	NEONATE, BIRTHWT >2499GW CONGENITAL/PERINATAL INFECTIONS
637	M	15	NEONATE,BWT>2499G NOT BORN HERE, PDX OTHER SIGNIF CONDITION
638	M	15	NEONATE, BIRTHWT>2499G, NOT BORN HERE, PDX OTHER PROBLEM
639	M	15	NEONATE, BIRTHWT>2499G, BORN HERE, WOTHER SIGNIF CONDITION
640	M	15	NEONATE,BWT >2499G,BORN HERE, NORMAL NB & NB W OTHER PROB
650	P	16	SPLENECTOMY
651	P	16	OTHER PROCEDURES OF BLOOD & BLOOD FORMING ORGANS
660	M	16	AGRANULOCYTOSIS & OTHER NEUTROPENIA
661	M	16	COAGULATION DISORDERS
662	M	16	SICKLE CELL ANEMIA CRISIS
663	M	16	RED BLOOD CELL DISORDERS EXCEPT SICKLE CELL ANEMIA CRISIS
664	M	16	OTHER DISORDERS OF BLOOD & BLOOD FORMING ORGANS
680	P	17	LYMPHOMA&LEUKEMIAWMAJORPROCEDURE
681	P	17	LYMPHOMA & LEUKEMIA W ANY OTHER PROCEDURE
682	P	17	MYELOPROLIF DISORDER & POORLY DIFF NEOPL W MAJOR PROCEDURE
683	P	17	MYELOPROLIF DISORDER & POORLY DIFF NEOPL W ANY OTHER PROCEDURE
690	M	17	ACUTE LEUKEMIA
691	M	17	LYMPHOMA& NON-ACUTE LEUKEMIA
692	M	17	RADIOTHERAPY
693	M	17	CHEMOTHERAPY
694	M	17	OTHER MYELOPROLIF DISORDERS & POORLY DIFF NEOPLASM DIAGNOSIS
710	P	18	PROCEDURES FOR INFECTIOUS & PARASITIC DISEASES
711	P	18	PROCEDURES FOR POSTOPERATIVE & POST TRAUMATIC INFECTIONS
720	M	18	SEPTICEMIA

721	M	18	POSTOPERATIVE & POST-TRAUMATIC INFECTIONS
722	M	18	FEVEROFUNKNOWNORIGIN
723	M	18	VIRAL ILLNESS
724	M	18	OTHER INFECTIOUS & PARASITIC DISEASES
740	P	19	PROCEDURE W PRINCIPAL DIAGNOSES OF MENTAL ILLNESS
750	M	19	SCHIZOPHRENIA
751	M	19	PSYCHOSES
752	M	19	DISORDERS OF PERSONALITY & IMPULSE CONTROL
753	M	19	BIPOLAR DISORDERS
754	M	19	DEPRESSION
755	M	19	NEUROSESEXCEPTDEPRESSIVE
756	M	19	ACUTE ADJUST REACT & DISTURBANCE OF PSYCHOSOCIAL DYSFUNCTION
757	M	19	ORGANIC DISTURBANCES & MENTAL RETARDATION
758	M	19	CHILDHOOD MENTAL DISORDERS
759	M	19	COMPULSIVE NUTRITION DISORDERS
760	M	19	OTHERMENTALDISORDERS
770	M	20	DRUG & ALCOHOL ABUSE OR DEPENDENCE, LEFT AGAINST MEDICAL ADVICE
771	M	20	ALCOHOL & DRUG DEPENDENCE W COMBINED REHAB & DETOX THERAPY
772	M	20	ALCOHOL & DRUG DEPENDENCE W REHABILITATION THERAPY
773	M	20	OPIOID ABUSE & DEPENDENCE
774	M	20	COCAINEABUSE&DEPENDENCE
775	M	20	ALCOHOL ABUSE & DEPENDENCE
776	M	20	OTHERDRUGABUSE&DEPENDENCE
790	P	21	SKIN GRAFT & WOUND DEBRIDEMENT FOR INJURIES
791	P	21	PROCEDURES FOR COMPLICATIONS OF TREATMENT
792	P	21	OTHER PROCEDURES FOR INJURIES
810	M	21	INJURIES TO UNSPECIFIED OR MULTIPLE SITES
811	M	21	ALLERGIC REACTIONS
812	M	21	POISONING & TOXIC EFFECTS OF DRUGS
813	M	21	COMPLICATIONSOFTREATMENT
814	M	21	CHILDORADULTMALTREATMENTSYNDROME
815	M	21	OTHER INJURY, POISONING & TOXIC EFFECT DIAGNOSES
830	M	22	BURNS, TRANSFERRED TO ANOTHER ACUTE CARE FACILITY
831	P	22	EXTENSIVE BURNS W PROCEDURE
832	P	22	NON EXTENSIVE BURNS W SKIN GRAFT
833	P	22	NONEXTENSIVE BURNS W WOUND DEBRIDEMENT & OTHER PROCEDURES
840	M	22	BURNS W/O PROCEDURE
850	P	23	PROCEDURE W DIAGNOSES OF OTHER CONTACT W HEALTH SERVICES
860	M	23	REHABILITATION
861	M	23	SIGNS & SYMPTOMS
862	M	23	OTHER FACTORS INFLUENCING HEALTH STATUS
870	P	24	TRACHEOSTOMY FOR HIV INFECTIONS
871	P	24	HIV W PROC W MULTIPLE MAJOR HIV RELATED INFECTIONS
872	P	24	HIV W PROCEDURE W MAJOR HIV RELATED DIAGNOSIS
873	P	24	HIV W PROCEDURE W/O MAJOR HIV RELATED DIAGNOSIS
890	M	24	HIV W MULTIPLE MAJOR HIV RELATED INFECTIONS
891	M	24	HIV W MAJ HIV REL DIAG W MULT MAJ OR SIGNIF HIV REL DIAG
892	M	24	HIV W MAJ HIV REL DIAG W/O MULT MAJ OR SIGNIF HIV REL DIAG
893	M	24	HIV W SIGNIFICANT HIV RELATED DIAGNOSIS
894	M	24	HIV W/O MAJOR OR SIGNIFICANT HIV RELATED DIAGNOSIS

910	P	25	CRANIOTOMY,SPINE,HIP & MAJOR LIMB PROC FOR MULTIPLE SIG TRAUMA
911	P	25	OTHER PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA
930	M	25	HEAD, CHEST & LOWER LIMB DIAGNOSES OF MULTIPLE SIGNIFICANT TRAUMA
931	M	25	OTHER DIAGNOSES OF MULTIPLE SIGNIFICANT TRAUMA
950	P		EXTENSIVE PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
951	P		PROSTATIC PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
952	P		NONEXTENSIVE PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
955	M		PRINCIPAL DIAGNOSIS INVALID AS DISCHARGE DIAGNOSIS
956	M		UNGROUPABLE

Table A.3. Major Diagnostic Classification (MDC) Categories

MDC	Description
1	DISEASES & DISORDERS OF THE NERVOUS SYSTEM
2	DISEASES & DISORDERS OF THE EYE
3	DISEASES & DISORDERS OF THE EAR, NOSE, MOUTH & THROAT
4	DISEASES & DISORDERS OF THE RESPIRATORY SYSTEM
5	DISEASES & DISORDERS OF THE CIRCULATORY SYSTEM
6	DISEASES & DISORDERS OF THE DIGESTIVE SYSTEM
7	DISEASES & DISORDERS OF THE HEPATOBILIARY SYSTEM & PANCREAS
8	DISEASES & DISORDERS OF THE MUSCULOSKELETAL SYSTEM & CONN TISSUE
9	DISEASES & DISORDERS OF THE SKIN, SUBCUTANEOUS TISSUE & BREAST
10	ENDOCRINE, NUTRITIONAL & METABOLIC DISEASES & DISORDERS
11	DISEASES & DISORDERS OF THE KIDNEY & URINARY TRACT
12	DISEASES & DISORDERS OF THE MALE REPRODUCTIVE SYSTEM
13	DISEASES & DISORDERS OF THE FEMALE REPRODUCTIVE SYSTEM
14	PREGNANCY, CHILDBIRTH & THE PUERPERIUM
15	NEWBORNS & OTHER NEONATES WITH CONDTN ORIG IN PERINATAL PERIOD
16	DISEASES & DISORDERS OF BLOOD, BLOOD FORMING ORGANS, IMMUNOLOG DISORD
17	MYELOPROLIFERATIVE DISEASES & DISORDERS, POORLY DIFFERENTIATED NEOPLASM
18	INFECTIOUS & PARASITIC DISEASES, SYSTEMIC OR UNSPECIFIED SITES
19	MENTAL DISEASES & DISORDERS
20	ALCOHOL/DRUG USE & ALCOHOL/DRUG INDUCED ORGANIC MENTAL DISORDERS
21	INJURIES, POISONINGS & TOXIC EFFECTS OF DRUGS
22	BURNS
23	FACTORS INFLUENCING HLTH STAT & OTHR CONTACTS WITH HLTH SERVCS
24	MULTIPLE SIGNIFICANT TRAUMA
25	HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS

Table A.4. Transfer, Procedure Days, UB-04 Categories

Category	Description	Definition
TRNSFER	Transfer-in	If admission type (ATYPE) not equal to ‘4’ (newborn) and - admission source (ASOURCE) equal to ‘2’ (Another Hospital) or - point of origin (POINTOFORIGINUB04) equal to '4' (Transfer from a Hospital)
NOPOUB04	UB-04 Point-of-Origin Data Not Available	If admission source (ASOURCE) is not equal to missing and point of origin (POINTOFORIGINUB04) is equal to missing
NOPRDAY	Procedure Days Data Not Available	If PRDAY1 and PRDAY2 and . . . PRDAYn is equal to missing, where n is the number of Procedure Codes reported the user’s data.