

NATIONAL QUALITY FORUM

Measure Submission and Evaluation Worksheet 5.0

This form contains the information submitted by measure developers/stewards, organized according to NQF's measure evaluation criteria and process. The evaluation criteria, evaluation guidance documents, and a blank online submission form are available on the [submitting standards web page](#).

NQF #: 0360	NQF Project: Surgery Project 2014
(for Endorsement Maintenance Review)	
Original Endorsement Date: May 15, 2008 Most Recent Endorsement Date: Dec 02, 2011 Last Updated Date: Jan 03, 2013	
BRIEF MEASURE INFORMATION	
De.1 Measure Title: Esophageal Resection Mortality Rate (IQI 8)	
Co.1.1 Measure Steward: Agency for Healthcare Research and Quality	
De.2 Brief Description of Measure: Number of inpatient deaths per 100 discharges with a procedure for esophageal resection	
2a1.1 Numerator Statement: Number of deaths among cases meeting the inclusion and exclusion rules for the denominator.	
2a1.4 Denominator Statement: Discharges, age 18 years and older, with ICD-9-CM esophageal resection procedure code and a diagnosis code of esophageal cancer or gastrointestinal-related cancer in any field OR any procedure for total gastrectomy AND any diagnosis of esophageal cancer.	
2a1.8 Denominator Exclusions: Exclude cases: <ul style="list-style-type: none"> • transferring to another short-term hospital (DISP=2) • MDC 14 (pregnancy, childbirth, and puerperium) • with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing) 	
1.1 Measure Type: Outcome 2a1. 25-26 Data Source: Claims 2a1.33 Level of Analysis: Facility	
1.2-1.4 Is this measure paired with another measure? No	
De.3 If included in a composite, please identify the composite measure (title and NQF number if endorsed): Esophageal resection volume (IQI 1)	

STAFF NOTES (issues or questions regarding any criteria)
Comments on Conditions for Consideration:
Is the measure untested? Yes <input checked="" type="radio"/> No <input checked="" type="radio"/> If untested, explain how it meets criteria for consideration for time-limited endorsement:
1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (check De.5): 5. Similar/related endorsed or submitted measures (check 5.1): Other Criteria:

Staff Reviewer Name(s):

1. IMPACT, OPPORTUNITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See [guidance on evidence](#).

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: H ☒ M ☒ L ☒ I ☒ NA

(The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.)

De.4 Subject/Topic Areas (Check all the areas that apply): Surgery, Surgery : Thoracic

De.5 Non-Condition Specific (Check all the areas that apply):

1a.1 Demonstrated High Impact Aspect of Healthcare: Severity of illness, Patient/societal consequences of poor quality

1a.2 If "Other," please describe:

1a.3 Summary of Evidence of High Impact (Provide epidemiologic or resource use data):

Esophageal resection is a complex cancer surgery, and studies have noted that providers with higher volumes have lower mortality rates. This suggests that providers with higher rates have some characteristics, either structurally or with regard to processes, that influence mortality.

1a.4 Citations for Evidence of High Impact cited in 1a.3: Patti MG, Corvera CU, Glasgow RE, et al. A hospital's annual rate of esophagectomy influences the operative mortality rate. J Gastrointest Surg 1998;2(2):186-92.

Gordon TA, Bowman HM, Bass EB, et al. Complex gastrointestinal surgery: impact of provider experience on clinical and economic outcomes. J Am Coll Surg 1999;189(1):46-56.

Dimick JB, Cowan JA, Jr., Ailawadi G, et al. National variation in operative mortality rates for esophageal resection and the need for quality improvement; 2003.

Finlayson EV, Goodney PP, Birkmeyer JD. Hospital volume and operative mortality in cancer surgery: a national study. Arch Surg 2003;138(7):721-5; discussion 726.

1b. Opportunity for Improvement: H ☒ M ☒ L ☒ I ☒ NA

(There is a demonstrated performance gap - variability or overall less than optimal performance)

1b.1 Briefly explain the benefits (improvements in quality) envisioned by use of this measure:

Providers can adopt the processes of care of the best performing providers or consumers can select the best performing providers in order to reduce the overall mortality rate

1b.2 Summary of Data Demonstrating Performance Gap (Variation or overall less than optimal performance across providers): **[For Maintenance – Descriptive statistics for performance results for this measure - distribution of scores for measured entities by quartile/decile, mean, median, SD, min, max, etc.]**

5th 25th Median 75th 95th
0.017203 0.037254 0.058397 0.086440 0.140230

1b.3 Citations for Data on Performance Gap: **[For Maintenance – Description of the data or sample for**

measure results reported in 1b.2 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included]

2007 AHRQ State Inpatient Databases (SID) with 465 hospitals and 1,587 discharges

1b.4 Summary of Data on Disparities by Population Group: [For Maintenance –Descriptive statistics for performance results for this measure by population group]

Based on the 2008 national statistics for esophageal resection mortality (<http://hcupnet.ahrq.gov>) the 2008 rates are as follows:

Overall rate per 100: 5.35 ; Risk adjusted rate: 6.59

Male: 5.75

Female: Too few reported to calculate reliable rates.

Ages 18 to 39: Too few reported to calculate reliable rates.

Ages 40 to 64: 3.15

Ages 65 to 74: 6.38

Ages 75+: 10.17

1b.5 Citations for Data on Disparities Cited in 1b.4: [For Maintenance – Description of the data or sample for measure results reported in 1b.4 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included]

AHRQ 2008 Nationwide Inpatient Sample

1c. Evidence (Measure focus is a health outcome OR meets the criteria for quantity, quality, consistency of the body of evidence.)

Is the measure focus a health outcome? Yes ☐ No ☐ If not a health outcome, rate the body of evidence.

Quantity: H ☐ M ☐ L ☐ I ☐ Quality: H ☐ M ☐ L ☐ I ☐ Consistency: H ☐ M ☐ L ☐ I ☐

Quantity	Quality	Consistency	Does the measure pass subcriterion1c?
M-H	M-H	M-H	Yes <input type="radio"/>
L	M-H	M	Yes <input type="radio"/> IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise No <input type="radio"/>
M-H	L	M-H	Yes <input type="radio"/> IF potential benefits to patients clearly outweigh potential harms: otherwise No <input type="radio"/>
L-M-H	L-M-H	L	No <input type="radio"/>

Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service

Does the measure pass subcriterion1c?
Yes ☐ IF rationale supports relationship

1c.1 Structure-Process-Outcome Relationship (Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome):

In-hospital death is directly related to the patient experience of care

1c.2-3 Type of Evidence (Check all that apply):

Systematic synthesis of research

1c.4 Directness of Evidence to the Specified Measure (State the central topic, population, and outcomes

See Guidance for Definitions of Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable

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addressed in the body of evidence and identify any differences from the measure focus and measure target population):

Face validity. Esophageal resection is a complex procedure that requires technical skill. The primary evidence for this indicator arises from the volume-outcome literature. Several studies have found that hospitals that perform more procedures have better mortality rates than lower volume hospitals. The magnitude of this relationship is relatively large as compared to other procedures. A full review of this literature can be found in the discussion of esophageal resection as a volume indicator. This relationship suggests that there may be some differences in processes of care that result in better outcomes. Those processes have not been identified and are subject to controversy, as it is unclear what the causal relationship is, if there truly is one, between hospital volume and mortality.

Precision. Esophageal resection is a relatively uncommon procedure, which may impact the precision of the indicator. Patti et al¹ noted that most hospitals perform 10 or fewer procedures during a 5-year period. Utilizing several years of data, which has been done in some of the volume-outcome research, may help improve the precision of this indicator.

Minimum bias. Although we located no studies specifically addressing the need for risk adjustment, most of the volume-outcome studies published have used some sort of risk adjustment, suggesting that risk adjustment may be important for this procedure. Most of those studies used administrative data for risk adjustment.

Practice patterns may influence mortality rate. One such factor is case selection and the practice of “opening and closing” complex cases. Pye et al. identified all patients with oesophagogastric malignancy over one year in Wales and showed that 30-day mortality was higher when surgeons operated on more than 70% of their patients. The significant difference in survival when more than 70% of patients were treated surgically compared with less than 70% (18% versus 5%), in conjunction with low overall anastomotic leak rate of 5%, strongly suggests that case selection is a major factor. In this study, the “open and close” rate was 23%, emphasizing the potential importance of preoperative case selection.² In addition, patient characteristics have been shown to influence mortality. Some of these patient characteristics can be captured using administrative data. For example, age, urgent or emergent admission, non-white race, and selected comorbidities (e.g., renal disease) have been identified as significant risk factors for in-hospital mortality.^{4,11} Bias due to these factors can be removed through risk-adjustment using administrative data.

Only a few studies have evaluated potential risk factors that are not available from administrative data. Griffin et al. showed that active smoking, forced vital capacity and forced expiratory volume prior to surgery were associated with severe postoperative pulmonary complications in 228 patients undergoing esophagectomy.³ However, their data base was too small to show whether these factors were also associated with mortality.

One study examined 995 patients undergoing esophagectomy in 24 hospitals in the United Kingdom. In the analyses, they identified some significant risk factors, including cancer staging, surgeon assessment of disease severity, and score on a standardized physiological assessment (Physiological and Operative Scoring System for enumeration of Morbidity and Mortality (POSSUM)). After adjusting for these risk factors, annual hospital volume was still significantly associated with in-hospital mortality, which might be due to some quality effects remaining even after adjusting for other variables.⁵

As expected, complications following surgery also affect mortality. In a chart review from one tertiary hospital in Texas, all esophagogastric resection (EG) cases from 1996 to 2002 were examined in relation to in-hospital mortality. Pneumonia was associated with a 20% incidence of death. Patients with pneumonia had significantly worse deglutition and anastomotic integrity on barium esophagogram compared with patients without pneumonia ($p < 0.001$).⁶

Construct validity. The extensive evidence regarding the association between hospital volume and mortality, summarized elsewhere, supports the construct validity of mortality as an indicator of hospital quality. Patti et al.¹ used five volume categories, and found decreasing mortality rates of 17%, 19%, 10%,

16%, and 6% (with volumes of 1-5, 6-10, 11-20, 21-30, and >30 procedures during the 5-year study period). Gordon et al.⁷ combined all complex gastrointestinal procedures, and found that low volume (11-20 procedures per year) hospitals had an adjusted odds of death of 4.0 as compared to the single high volume hospital. In the most prominent study of the volume-outcome association, Birkmeyer et al used Medicare data from 1994 through 1999 to estimate volume-outcome relationships, imputing total annual hospital volume and adjusting for age, sex, race, year of the procedure, urgency of admission, mean income from Social Security at the ZIP Code level, and coexisting conditions from the index admission and other admissions within the preceding six months (summarized as the Charlson Comorbidity Index). They found that crude mortality rates were 23.1, 18.9, 16.9, 11.7, and 8.1 percent in very low (<2 imputed cases/year), low (2-4), medium (5-7), high (8-19) and very high (>19) volume hospital groups, respectively. Unadjusted and adjusted odds ratios were 0.78 and 0.85, 0.68 and 0.76, 0.44 and 0.51, and 0.29 and 0.36 in low, medium, high and very high volume hospitals, respectively, relative to very low volume hospitals.¹⁰ Similar findings (e.g., 2.6 to 2.9-fold variation in adjusted mortality across hospital volume strata) have been reported from studies based on the Nationwide Inpatient Sample, which is designed as a 20% random sample of all hospital discharges in the US.^{11,12} This association was confirmed in the Netherlands, where hospital mortality was reported as 12.1, 7.5%, and 4.9% at low (1-10 cases/year), medium (11-20), and high (>50) volume centers, respectively.⁸ A weaker but still significant effect was observed in Ontario, with an adjusted odds ratio of 1.9 at the lowest volume hospitals (mean 2.8 cases/year) relative to the highest volume hospitals (mean 19.0 cases/year).¹⁷ The association between hospital volume and mortality also persisted after adjustment for physiologic predictors in one study from the UK.⁵ Dimick showed that the association between volume and mortality may be mediated by complications such as renal failure, pulmonary failure, septicemia, reintubation and aspiration.⁹

Dimick also found a significant decline in hospital mortality after esophagectomy in the U.S. from 1988 to 2000 (13.6% to 10.5%, $P=0.001$). Low volume hospitals had markedly higher mortality rates and showed no improvement over time (15.3% vs 14.5%). In contrast, high volume hospitals experienced a significant reduction in mortality over time (11.0% vs 7.5%, $p = 0.003$). Referral patterns changed over time with the proportion of esophageal resections performed at high volume hospitals increasing from 40% (1988 to 1991) to 57% (1997 to 2000).¹³

Beyond hospital volume, recent studies have examined other hospital characteristics and their relation to mortality. Dimick et al. looked at hospital teaching status and found that in analyses adjusted only for patient characteristics, esophageal resection mortality was lower at teaching hospitals than at nonteaching hospitals (OR=1.8, 95% CI 1.1-3.2). However, after adjusting for hospital volume, teaching status was no longer an independent predictor of mortality (OR=1.4, 95% CI 0.7-2.6).¹⁴ In a study of 366 patients with esophageal resection, no significant association between the nighttime nurse-to-patient ratio (NNPR) and in-hospital mortality was seen. However, a nurse typically caring for more than two ICU patients at night significantly increased the risk of postoperative pneumonia, reintubation, and septicemia.¹⁵

Patients treated at the 51 National Cancer Institute (NCI) cancer centers were compared with patients from 51 control hospitals with the highest volume for esophagectomy. NCI cancer centers had lower adjusted surgical mortality rates than control hospitals for esophagectomy (7.9% vs. 10.9%; $P = 0.027$).¹⁸ Taken together, these findings suggest that risk-adjusted mortality rates may capture other aspects of hospital quality, beyond what volume alone would capture.

Surgeons' training and experience have also been examined as predictors of mortality. Using the national Medicare population in 1998-1999, mortality rates were 37% (odds ratio, 1.37; 95% confidence interval, 1.02 to 1.82) higher for surgeons without specialty training compared with thoracic surgeons (adjusted mortality 16.5% versus 12.4%; $p = 0.01$). However, differences in mortality between high-volume and low-volume hospitals (24.3% versus 11.4%; $p < 0.001$) and surgeons (20.7% versus 10.7%; $p < 0.001$) were larger than those between thoracic and general surgeons.¹⁹ Also using Medicare data, Birkmeyer et al. showed that surgeon volume is a strong independent risk factor for esophagectomy mortality (e.g., 18.8% for surgeons with <2 imputed cases/year versus 9.2% for surgeons with >6 imputed cases/year), even after adjusting for hospital volume. For example, even at high-volume hospitals (>13 imputed cases/year), adjusted mortality was 17.2%, 9.8%, and 8.0% for low, medium, and high-volume surgeons.²⁰

Finally, according to a recent meta-analysis of 50 articles comparing surgical techniques for esophageal

resection, in-hospital mortality was significantly higher after transthoracic esophageal resection than after transhiatal resection (9.2% versus 5.7%, RR=1.60, 95% CI 1.35-1.89). However, the 3 randomized controlled trials included in that meta-analysis did not support this overall finding (although they collectively included only 106 patients), and the benefits of transhiatal resection disappeared in analyses of 3-year and 5-year survival. Therefore, it is unclear whether hospitals and surgeons can improve their overall outcomes by changing their preferred surgical approach.²¹

Fosters true quality improvement. Though we found no evidence on whether or not this indicator would stimulate true improvement in quality, it is possible that high risk patients may be denied surgery. This hypothesized effect has not been empirically evaluated or demonstrated. One study found no evidence of discrimination against racial/ethnic minorities or Medicaid or uninsured patients in terms of the odds of receiving esophageal resection at low or high volume (relative to medium volume) hospitals.²⁸

Prior use. This indicator has been utilized in the National Healthcare Quality Report¹⁶ and is currently included in the AHRQ Inpatient Quality Indicator set.

1c.5 Quantity of Studies in the Body of Evidence (Total number of studies, not articles):

1c.6 Quality of Body of Evidence (Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events):

1c.7 Consistency of Results across Studies (Summarize the consistency of the magnitude and direction of the effect):

1c.8 Net Benefit (Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms):

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded?

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.11 System Used for Grading the Body of Evidence: Not applicable

1c.12 If other, identify and describe the grading scale with definitions:

1c.13 Grade Assigned to the Body of Evidence: Not applicable

1c.14 Summary of Controversy/Contradictory Evidence: None

1c.15 Citations for Evidence other than Guidelines(Guidelines addressed below):

1. Patti MG, Corvera CU, Glasgow RE, et al. A hospital's annual rate of esophagectomy influences the operative mortality rate. J Gastrointest Surg 1998;2(2):186-92.
2. Pye JK, Crumplin MK, Charles J, et al. One-year survey of carcinoma of the oesophagus and stomach in Wales. In: Br J Surg; 2001. p. 278-85.
3. Griffin SM, Shaw IH, Dresner SM. Early complications after Ivor Lewis subtotal esophagectomy with two-field lymphadenectomy: risk factors and management. In: J Am Coll Surg; 2002. p. 285-97.
4. Dimick JB, Cattaneo SM, Lipsett PA, et al. Hospital volume is related to clinical and economic

- outcomes of esophageal resection in Maryland. In: Ann Thorac Surg; 2001. p. 334-9; discussion 339-41.
5. McCulloch P, Ward J, Tekkis PP. Mortality and morbidity in gastro-oesophageal cancer surgery: initial results of ASCOT multicentre prospective cohort study. In: Bmj; 2003 Nov 22; 2003. p. 1192-7.
 6. Atkins BZ, Shah AS, Hutcheson KA, et al. Reducing hospital morbidity and mortality following esophagectomy. In: Ann Thorac Surg; 2004. p. 1170-6; discussion 1170-6.
 7. Gordon TA, Bowman HM, Bass EB, et al. Complex gastrointestinal surgery: impact of provider experience on clinical and economic outcomes. J Am Coll Surg 1999;189(1):46-56.
 8. van Lanschot JJ, Hulscher JB, Buskens CJ, et al. Hospital volume and hospital mortality for esophagectomy; 2001.
 9. Dimick JB, Pronovost PJ, Cowan JA, et al. Surgical volume and quality of care for esophageal resection: do high-volume hospitals have fewer complications? Ann Thorac Surg 2003 Feb;Sect. 337-41.
 10. Birkmeyer JD, Siewers AE, Finlayson EV, et al. Hospital volume and surgical mortality in the United States. In: N Engl J Med; 2002. p. 1128-37.
 11. Dimick JB, Cowan JA, Jr., Ailawadi G, et al. National variation in operative mortality rates for esophageal resection and the need for quality improvement; 2003.
 12. Finlayson EV, Goodney PP, Birkmeyer JD. Hospital volume and operative mortality in cancer surgery: a national study. Arch Surg 2003;138(7):721-5; discussion 726.
 13. Dimick JB, Wainess RM, Upchurch GR, Jr., et al. National trends in outcomes for esophageal resection. In: Ann Thorac Surg; 2005. p. 212-6; discussion 217-8.
 14. Dimick JB, Cowan JA, Jr., Colletti LM, et al., inventors; Hospital teaching status and outcomes of complex surgical procedures in the United States. 2004 Feb.
 15. Amaravadi RK, Dimick JB, Pronovost PJ, et al. ICU nurse-to-patient ratio is associated with complications and resource use after esophagectomy; 2000.
 16. National Healthcare Quality Report. In: Agency for Healthcare Research and Quality; 2003.
 17. Urbach DR, Bell CM, Austin PC. Differences in operative mortality between high- and low-volume hospitals in Ontario for 5 major surgical procedures: estimating the number of lives potentially saved through regionalization; 2003.
 18. Birkmeyer NJ, Goodney PP, Stukel TA, et al. Do cancer centers designated by the National Cancer Institute have better surgical outcomes? In: Cancer; 2005. p. 435-41.
 19. Dimick JB, Goodney PP, Orringer MB, Birkmeyer JD. Specialty training and mortality after esophageal cancer resection. Ann Thorac Surg. 2005;80:282-6.
 20. Birkmeyer JD, Stukel TA, Siewers AE, et al. Surgeon volume and operative mortality in the United States. 2003;349:2117-27.
 21. Huylscher JBF, Tijssen JGP, Obertop H, van Lanschot JJB. Transthoracic versus transhiatal resection for carcinoma of the esophagus: A meta-analysis. Ann Thorac Surg 2001;72:306-13.
 28. Liu JH, Zingmond DS, McGory ML, et al. Disparities in the utilization of high-volume hospitals for complex surgery. In: Jama; 2006. p. 1973-80.

1c.16 Quote verbatim, the specific guideline recommendation (Including guideline # and/or page #):
Not applicable

1c.17 Clinical Practice Guideline Citation: Not applicable

1c.18 National Guideline Clearinghouse or other URL: Not applicable

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded?

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: During the comprehensive medical literature review, preference was given to high quality systematic reviews, meta-analyses, and clinical trials over the past ten years, plus existing nationally recognized treatment guidelines

from the leading specialty societies.

1c.22 If other, identify and describe the grading scale with definitions:

1c.23 Grade Assigned to the Recommendation: Not applicable

1c.24 Rationale for Using this Guideline Over Others: None

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?

1c.25 Quantity: **1c.26 Quality:** **1c.27 Consistency:**

1c.28 Attach evidence submission form:

1c.29 Attach appendix for supplemental materials:

Was the threshold criterion, *Importance to Measure and Report*, met?

(1a & 1b must be rated moderate or high and 1c yes) Yes ☐ No ☒

Provide rationale based on specific subcriteria:

For a new measure if the Committee votes NO, then STOP.

For a measure undergoing endorsement maintenance, if the Committee votes NO because of 1b. (no opportunity for improvement), it may be considered for continued endorsement and all criteria need to be evaluated.

2. RELIABILITY & VALIDITY - 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**)

Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See [guidance on measure testing](#).

S.1 Measure Web Page (*In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained*). Do you have a web page where current detailed specifications for this measure can be obtained? Yes

S.2 If yes, provide web page URL: www.qualityindicators.ahrq.hhs.gov

2a. RELIABILITY. Precise Specifications and Reliability Testing: H ☒ M ☒ L ☒ I ☒

2a1. Precise Measure Specifications. (*The measure specifications precise and unambiguous.*)

2a1.1 Numerator Statement (*Brief, narrative description of the measure focus or what is being measured about the target population, e.g., cases from the target population with the target process, condition, event, or outcome*):

Number of deaths among cases meeting the inclusion and exclusion rules for the denominator.

2a1.2 Numerator Time Window (*The time period in which the target process, condition, event, or outcome is eligible for inclusion*):

Inpatient admission

2a1.3 Numerator Details (*All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, codes with descriptors, and/or specific data collection items/responses*):

Discharge disposition of death (DISP=20)

2a1.4 Denominator Statement (Brief, narrative description of the target population being measured):
Discharges, age 18 years and older, with ICD-9-CM esophageal resection procedure code and a diagnosis code of esophageal cancer or gastrointestinal-related cancer in any field OR any procedure for total gastrectomy AND any diagnosis of esophageal cancer.

2a1.5 Target Population Category (Check all the populations for which the measure is specified and tested if any): Adult/Elderly Care, Elderly

2a1.6 Denominator Time Window (The time period in which cases are eligible for inclusion):
User defined; usually a calendar year

2a1.7 Denominator Details (All information required to identify and calculate the target population/denominator such as definitions, codes with descriptors, and/or specific data collection items/responses):

ICD-9-CM esophageal resection procedure codes:

424 ESOPHAGECTOMY
4240 ESOPHAGECTOMY NOS
4241 PARTIAL ESOPHAGECTOMY
4242 TOTAL ESOPHAGECTOMY
425 THORAC ESOPHAG ANAST
4251 THORAC ESOPHAGUESOPHAGOS
4252 THORAC ESOPHAGOGASTROST
4253 THORAC SM BOWEL INTERPOS
4254 THORAC ESOPHAGOENTER NEC
4255 THORAC LG BOWEL INTERPOS
4256 THORAC ESOPHAGOCOLOS NEC
4258 THORAC INTERPOSITION NEC
4259 THORAC ESOPHAG ANAST NEC
426 STERN ESOPHAG ANAST
4261 STERN ESOPHAGUESOPHAGOST
4262 STERN ESOPHAGOGASTROSTOM
4263 STERN SM BOWEL INTERPOS
4264 STERN ESOPHAGOENTER NEC
4265 STERN LG BOWEL INTERPOS
4266 STERN ESOPHAGOCOLOS NEC
4268 STERN INTERPOSITION NEC
4269 STERN ESOPHAG ANAST NEC

ICD-9-CM esophageal cancer code:

1500 MAL NEO CERVICAL ESOPHAG
1501 MAL NEO THORACIC ESOPHAG
1502 MAL NEO ABDOMIN ESOPHAG
1503 MAL NEO UPPER 3RD ESOPH
1504 MAL NEO MIDDLE 3RD ESOPH
1505 MAL NEO LOWER 3RD ESOPH
1508 MAL NEO ESOPHAGUS NEC
1509 MAL NEO ESOPHAGUS NOS

ICD-9CM gastrointestinal-related cancer code:

1510 MAL NEO STOMACH CARDIA
 1978 SEC MAL NEO GI NEC
 2301 CA IN SITU ESOPHAGUS
 2355 UNC BEHAV NEO GI NEC

ICD-9-CM gastrectomy procedure code:
 4399 OTHER TOTAL GASTRECTOMY
 ICD-9-CM esophageal cancer code:

1500 MAL NEO CERVICAL ESOPHAG
 1501 MAL NEO THORACIC ESOPHAG
 1502 MAL NEO ABDOMIN ESOPHAG
 1503 MAL NEO UPPER 3RD ESOPH
 1504 MAL NEO MIDDLE 3RD ESOPH
 1505 MAL NEO LOWER 3RD ESOPH
 1508 MAL NEO ESOPHAGUS NEC
 1509 MAL NEO ESOPHAGUS NOS

2a1.8 Denominator Exclusions (Brief narrative description of exclusions from the target population):

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

2a1.9 Denominator Exclusion Details (All information required to identify and calculate exclusions from the denominator such as definitions, codes with descriptors, and/or specific data collection items/responses):

2a1.10 Stratification Details/Variables (All information required to stratify the measure results including the stratification variables, codes with descriptors, definitions, and/or specific data collection items/responses):

Observed rates may be stratified by age group, race/ethnicity categories, payer categories and sex.

2a1.11 Risk Adjustment Type (Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13): **Statistical risk model** **2a1.12 If "Other," please describe:**

2a1.13 Statistical Risk Model and Variables (Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development should be addressed in 2b4.):

The predicted value for each case is computed using GEE logistic regression and covariates for age (in 5-year age groups), APR-DRG and MDC. The reference population used in the regression is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007, a database consisting of approximately 35 million discharges from 43 states. 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., county or state). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate. The Smoothed Rate is the risk-adjusted rate shrunken to the volume-specific rate and the prior year smoothed rate.
 age 18-24; age 25-29; age 30-34; age 35-39; age 40-44; age 45-49; age 50-54; age 55-59; age 60-64 (omitted); age 65-69; age 70-74; age 75-79; age 80-84; age 85+
 each age category*female

APRDRG 2201-MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES (MINOR)

APRDRG 2202-MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES (MODERATE) ADRG
2203-MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES (MAJOR)
APRDRG 2204-MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES (EXTREME) ADRG
9999 (OTHER)

2a1.14-16 Detailed Risk Model Available at Web page URL (or attachment). Include coefficients, equations, codes with descriptors, definitions, and/or specific data collection items/responses. Attach documents only if they are not available on a webpage and keep attached file to 5 MB or less. NQF strongly prefers you make documents available at a Web page URL. Please supply login/password if needed:

URL

[http://www.qualityindicators.ahrq.gov/downloads/iqi/IQI%20Risk%20Adjustment%20Tables%20\(Versions%2004%20to%2009\)%20wo%20APR-DRG.pdf](http://www.qualityindicators.ahrq.gov/downloads/iqi/IQI%20Risk%20Adjustment%20Tables%20(Versions%2004%20to%2009)%20wo%20APR-DRG.pdf)

2a1.17-18. Type of Score: [Rate/proportion](#)

2a1.19 Interpretation of Score (*Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score*):
[Better quality = Lower score](#)

2a1.20 Calculation Algorithm/Measure Logic(*Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.*):

Each Inpatient Quality Indicator (IQI) expressed as a rate, is defined as outcome of interest/population at risk or numerator/denominator. The Quality Indicators software performs five steps to produce the IQI rates. 1) Discharge-level data is used to mark inpatient records containing outcomes of interest. 2) Identify populations at risk. For provider IQIs populations at risk are derived from hospital discharge records. 3) Calculate observed rates. Using output data from steps 1 and 2, IQI rates are calculated for user-specified combinations of stratifiers. 4) Risk adjust the IQI rates. Regression coefficients from a reference population database are applied to the observed rates in the risk-adjustment process. The risk-adjusted rates will then reflect the age and APR-DRG distribution of data in the reference population. 5) Create multivariate signal extraction (MSX) smoothed rates. Shrinkage factors are applied to the risk-adjusted rates for each IQI in the MSX process. For each IQI, the shrinkage estimate reflects a reliability adjustment unique to each indicator. Full information on IQI algorithms and specification can be found at http://qualityindicators.ahrq.gov/iqi_download.htm.

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:

2a1.24 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](#)

2a1.25 Data Source (*Check all the sources for which the measure is specified and tested*). If other, please describe:

[Claims](#)

2a1.26 Data Source/Data Collection Instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): [Hospital administrative](#)

discharge data. See data requirements in the AHRQ QI Windows Application Documentation:
<http://www.qualityindicators.ahrq.gov/software.htm>

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment: [URL
http://www.qualityindicators.ahrq.gov/software.htm](http://www.qualityindicators.ahrq.gov/software.htm)

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:

[URL](http://www.qualityindicators.ahrq.gov/downloads/winqi/AHRQ_QI_Windows_Software_Documentation_V41a.pdf)

http://www.qualityindicators.ahrq.gov/downloads/winqi/AHRQ_QI_Windows_Software_Documentation_V41a.pdf

2a1.33 Level of Analysis (Check the levels of analysis for which the measure is specified and tested):
[Facility](#)

2a1.34-35 Care Setting (Check all the settings for which the measure is specified and tested):
[Inpatient/Hospital](#)

2a2. Reliability Testing. (Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability.)

2a2.1 Data/Sample (Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):

[AHRQ 2007 State Inpatient Databases \(SID\)](#)

2a2.2 Analytic Method (Describe method of reliability testing & rationale):

[Annual review of ICD-9-CM coding updates for denominator inclusion and exclusion criteria](#)

2a2.3 Testing Results (Reliability statistics, assessment of adequacy in the context of norms for the test conducted):

[Not applicable](#)

2b. VALIDITY. Validity, Testing, including all Threats to Validity: **H ● M ● L ● I ●**

2b1.1 Describe how the measure specifications (measure focus, target population, and exclusions) **are consistent with the evidence cited in support of the measure focus (criterion 1c) and identify any differences from the evidence:**

2b2. Validity Testing. (Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)

2b2.1 Data/Sample (Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):

[AHRQ 2007 State Inpatient Databases \(SID\)](#)

2b2.2 Analytic Method (Describe method of validity testing and rationale; if face validity, describe systematic assessment):

[Annual update of risk-adjustment models and comparative data](#)

2b2.3 Testing Results (Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment):

[Signal variance of 0.001518. Average signal ratio of 0.26.](#)

POTENTIAL THREATS TO VALIDITY. (All potential threats to validity were appropriately tested with

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adequate results.)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions (*Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*):
[AHRQ 2007 State Inpatient Databases \(SID\)](#)

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference*):
[Not applicable](#)

2b3.3 Results (*Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses*):
[Not applicable](#)

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample (*Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*):
[AHRQ 2007 State Inpatient Databases \(SID\)](#)

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables*):
The predicted value for each case is computed using GEE logistic regression and covariates for age (in 5-year age groups), APR-DRG and MDC. The reference population used in the regression is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007, a database consisting of approximately 35 million discharges from 43 states. 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., county or state). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate. The Smoothed Rate is the risk-adjusted rate shrunken to the volume-specific rate and the prior year smoothed rate.

2b4.3 Testing Results (*Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata*):
[c-statistic of 0.766](#)

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: [Not applicable](#)

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample (*Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*):
[AHRQ 2007 State Inpatient Databases \(SID\)](#)

2b5.2 Analytic Method (*Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance*):
[Posterior probability distribution \(gamma\); 95% probability interval](#)

2b5.3 Results (Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningful differences in performance):

5th 25th Median 75th 95th

0.017203 0.037254 0.058397 0.086440 0.140230

Discrimination above or below the median of 3% of hospitals

2b6. Comparability of Multiple Data Sources/Methods. (If specified for more than one data source, the various approaches result in comparable scores.)

2b6.1 Data/Sample (Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):

Not applicable

2b6.2 Analytic Method (Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure):

Not applicable

2b6.3 Testing Results (Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted):

Not applicable

2c. Disparities in Care: H ☒ M ☒ L ☒ I ☒ NA ☒ (If applicable, the measure specifications allow identification of disparities.)

2c.1 If measure is stratified for disparities, provide stratified results (Scores by stratified categories/cohorts): Based on the 2008 national statistics for esophageal resection mortality (<http://hcupnet.ahrq.gov>) the 2008 rates are as follows:

Overall rate per 100: 5.35 ; Risk adjusted rate: 6.59

Male: 5.75

Female: Too few reported to calculate reliable rates.

Ages 18 to 39: Too few reported to calculate reliable rates.

Ages 40 to 64: 3.15

Ages 65 to 74: 6.38

Ages 75+: 10.17

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:

Rates may be stratified by age, gender and payer categories

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, Scientific Acceptability of Measure Properties, met? (Reliability and Validity must be rated moderate or high) Yes ☒ No ☒
Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can

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understand the results of the measure and are likely to find them useful for decision making. (**evaluation criteria**)

C.1 Intended Actual/Planned Use (Check all the planned uses for which the measure is intended):
Payment Program, Public Reporting, Quality Improvement (Internal to the specific organization)

3.1 Current Use (Check all that apply; for any that are checked, provide the specific program information in the following questions):

3a. Usefulness for Public Reporting: H O M O L O I O
(The measure is meaningful, understandable and useful for public reporting.)

3a.1. Use in Public Reporting - disclosure of performance results to the public at large (If used in a public reporting program, provide name of program(s), locations, Web page URL(s)). If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: [**For Maintenance** – If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.]

- 1) State of California: Hospital Inpatient Mortality Indicators for California, http://oshpd.ca.gov/HID/Products/PatDischargeData/AHRQ/iqi-imi_overview.html
- 2) State of Florida: Florida Health Finder, <http://www.floridahealthfinder.gov/>
- 3) Norton Healthcare (multi-hospital system): Norton Healthcare Quality Report, <http://www.nortonhealthcare.com/body.cfm?id=157>
- 4) State of Massachusetts: My HealthCare Options, <http://www.mass.gov/healthcareqc>
- 5) State of New Jersey: Find and Compare Quality Care in New Jersey Hospitals, <http://www.nj.gov/health/healthcarequality/>
- 6) Niagara Health Quality Coalition and Alliance for Quality Health Care: New York State Hospital Report Card, <http://www.myhealthfinder.com/>
- 7) State of Texas: Reports on Hospital Performance, <http://www.dshs.state.tx.us/thcic/>
- 8) Niagara Health Quality Coalition and Alliance for Quality Health Care: Washington State Hospital Report Card, <http://www.myhealthfinder.com/wa09/index.php>
- 9) State of Nevada: Nevada Compare Care, <http://nevadacomparecare.net/Monahrq/home.html>
- 10) State of Vermont: Department of Banking, Insurance, Securities & Health Care Administration (BISHCA) Comparison Report, <http://www.bishca.state.vt.us/health-care/hospitals-health-care-practitioners/2009-vermont-hospital-report-card>
- 11) Wisconsin Hospital Association: CheckPoint, <http://www.wicheckpoint.org/index.aspx>

3a.2. Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting. If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results:

3.2 Use for other Accountability Functions (payment, certification, accreditation). If used in a public accountability program, provide name of program(s), locations, Web page URL(s): [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.org. 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)

3b. Usefulness for Quality Improvement: H● M● L● I●

(The measure is meaningful, understandable and useful for quality improvement.)

3b.1. Use in QI. If used in quality improvement program, provide name of program(s), locations, Web page URL(s):

[For Maintenance – *If not used for QI, indicate the reasons and describe progress toward using performance results for improvement].*

3b.2. Provide rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement. If usefulness was demonstrated (e.g., QI initiative), describe the data, method and results:

Overall, to what extent was the criterion, Usability, met? H● M● L● I●

Provide rationale based on specific subcriteria:

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (**evaluation criteria**)

4a. Data Generated as a Byproduct of Care Processes: H● M● L● I●

4a.1-2 How are the data elements needed to compute measure scores generated? *(Check all that apply).*

Data used in the measure are:

[Coded by someone other than person obtaining original information \(e.g., DRG, ICD-9 codes on claims\)](#)

4b. Electronic Sources: H● M● L● I●

4b.1 Are the data elements needed for the measure as specified available electronically *(Elements that are needed to compute measure scores are in defined, computer-readable fields):* [Yes](#)

4b.2 If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources:

4c. Susceptibility to Inaccuracies, Errors, or Unintended Consequences: H● M● L● I●

4c.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to prevent, minimize, or detect. If audited, provide results:

[Based on national average mortality rates taken from the 2000 Nationwide Inpatient Sample the minimum hospital caseload necessary to detect a doubling of the mortality rate for esophageal resection is 77 \(the rate the authors determined necessary to reliably detect increased mortality in poor performing hospitals\). Only 1% of hospitals performed esophageal resections frequently when combining 3 years of data for the authors to advocate use of this indicator as a measure of hospital quality at the hospital-level.\[1\]](#)

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AHRQ IQIs, including Esophageal Resection Mortality Rate, were easily applied to Veterans Administration data (2004 – 2007). The relative insensitivity of procedure-related mortality indicators to detect temporal change or site differences in the VA are hypothesized in this study to be attributable to “the success of longstanding VA programs... or because of inadequate sample sizes (eg. esophageal cancer resection had only 0-12 cases in a given year).” [2]

[1] Justin B. Dimick, MD; H. Gilbert Welch, MD, MPH; John D. Birkmeyer, MD. Surgical Mortality as an Indicator of Hospital Quality: The Problem With Small Sample Size. JAMA. 2004;292:847-851.

[2] Borzecki Ann M; Christiansen Cindy L; Loveland Susan; Chew Priscilla; Rosen Amy K. Trends in the inpatient quality indicators: the Veterans Health Administration experience. Medical Care. 2010;48:694-702.

4d. Data Collection Strategy/Implementation: H ☐ M ☒ L ☐ I ☐

A.2 Please check if either of the following apply (regarding proprietary measures):

4d.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 and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues (e.g., fees for use of proprietary measures):

None

Overall, to what extent was the criterion, *Feasibility*, met? H ☐ M ☒ L ☐ I ☐

Provide rationale based on specific subcriteria:

OVERALL SUITABILITY FOR ENDORSEMENT

Does the measure meet all the NQF criteria for endorsement? Yes ☒ No ☐

Rationale:

If the Committee votes No, STOP.

If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.

5. COMPARISON TO RELATED AND COMPETING MEASURES

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure before a final recommendation is made.

5.1 If there are related measures (either same measure focus or target population) or competing measures (both the same measure focus and same target population), list the NQF # and title of all related and/or competing measures:

5a. Harmonization

5a.1 If this measure has EITHER the same measure focus OR the same target population as [NQF-endorsed measure\(s\)](#): Are the measure specifications completely harmonized?

5a.2 If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden:

5b. Competing Measure(s)

5b.1 If this measure has both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible):

The AHRQ measure has improved discrimination and predictive properties; the AHRQ measure also has an associated measure of uncertainty.

Related Measures: Leapfrog esophagectomy survival predictor (NQF# Unknown)

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner): Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, Maryland, 20850

Co.2 Point of Contact: Pamela, Owens, PhD, Pam.Owens@ahrq.hhs.gov, 301-427-1412-

Co.3 Measure Developer if different from Measure Steward: 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: Mamatha, Pancholi, MS, Mamatha.Pancholi@ahrq.hhs.gov, 301-427-1470-, Agency for Healthcare Research and Quality

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

UC Davis

Stanford University

Battelle Memorial Institute

Co.7 Public Contact: John, Bott, MSSW, MBA, john.bott@ahrq.hhs.gov, 301-427-1317-, Agency for Healthcare Research and Quality

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.

None

Ad.2 If adapted, provide title of original measure, NQF # if endorsed, and measure steward. Briefly describe the reasons for adapting the original measure and any work with the original measure steward: Not applicable

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.3 Year the measure was first released: 2002

Ad.4 Month and Year of most recent revision: 10, 2010

Ad.5 What is your frequency for review/update of this measure? annually

Ad.6 When is the next scheduled review/update for this measure? 05, 2011

Ad.7 Copyright statement: The AHRQ QI software is publicly available. We have no copyright disclaimers.

Ad.8 Disclaimers:

Ad.9 Additional Information/Comments:
Date of Submission (MM/DD/YY): 10/26/2010