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 #:** 0366 **NQF Project:** Surgery Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Pancreatic Resection Volume (IQI 2)
De.2 **Brief description of measure:** Number of adult hospital discharges with procedure for pancreatic resection, stratified by benign and malignant disease.
1.1-2 **Type of Measure:** Structure De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** Paired with Pancreatic Resection Mortality (IQI 9) NQF #0365
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:** Severity of illness, 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 14,255 procedures for pancreatic resection in 1,286 hospitals. The following table stratifies the procedures by condition (non-pancreatic cancer/benign, pancreatic cancer/malignant) and procedure type (partial resection, resection): Column 1: Strata Column 2: Partial Pancreatic Resection Column 3: Pancreatic Resection Column 4: All cases Strata — Volume Non-Pancreatic Cancer 4,274 2,309 6,583 Pancreatic Cancer 1,762 5,880 7,642 All cases 6,036 8,189 14,225 1. Pancreatic resection is a procedure requiring technical proficiency. Complications can include pneumonia, sepsis, and death. 2. Many studies have demonstrated a relationship between hospital volume and mortality (at least thirteen	1a C☐ P☐ M☐ N☐

studies), while four have found no such relationship. Methodology varies between studies including data used (e.g., clinical, administrative), adjustment of confounding factors, and accounting for the volume of the operating surgeon.

3. A few studies have found that high volume centers have lower mean length of stay but not lower readmission rates.

4. One study demonstrated that volume of the operating surgeon accounted for about half of the hospital volume-mortality effect, but others have found that the effect of hospital volume may be more important than the effect of surgeon volume.

1a.4 Citations for Evidence of High Impact: Source: 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.

1. Glasgow RE, Mulvihill SJ. Hospital volume influences outcome in patients undergoing pancreatic resection for cancer. West J Med 1996;165(5):294-300.
2. Owings MF, Kozak LJ. Ambulatory and inpatient procedures in the United States, 1996. Vital Health Stat 13 1998(139):1-119.
3. Begg CB, Cramer LD, Hoskins WJ, et al. Impact of hospital volume on operative mortality for major cancer surgery. JAMA 1998;280(20):1747-51.
4. Gouma DJ, van Geenen RC, van Gulik TM, et al. Rates of complications and death after pancreaticoduodenectomy: risk factors and the impact of hospital volume; 2000.
5. 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.
6. Lieberman MD, Kilburn H, 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.
7. Sosa JA, Bowman HM, Gordon TA, et al. Importance of hospital volume in the overall management of pancreatic cancer. Ann Surg 1998;228(3):429-38.
8. Ho V, Heslin MJ. Effect of hospital volume and experience on in-hospital mortality for pancreaticoduodenectomy; 2003 Apr.
9. Finlayson EV, Goodney PP, Birkmeyer JD. Hospital volume and operative mortality in cancer surgery: a national study. In: Arch Surg; 2003. p. 721-5; discussion 726.
10. Finlayson EV, Birkmeyer JD. Effects of hospital volume on life expectancy after selected cancer operations in older adults: a decision analysis; 2003.
11. Simunovic M, To T, Theriault M, et al. Relation between hospital surgical volume and outcome for pancreatic resection for neoplasm in a publicly funded health care system [see comments]. Cmaj 1999;160(5):643-8.
12. Neoptolemos JP, Russell RC, Bramhall S, et al. Low mortality following resection for pancreatic and periampullary tumours in 1026 patients: UK survey of specialist pancreatic units. UK Pancreatic Cancer Group [see comments]. Br J Surg 1997;84(10):1370-6.
13. Birkmeyer JD, Finlayson SR, Tosteson AN, et al. Effect of hospital volume on in-hospital mortality with pancreaticoduodenectomy. Surgery 1999;125(3):250-6.
14. 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.
15. Birkmeyer JD, Stukel TA, Siewers AE, et al. Surgeon volume and operative mortality in the United States; 2003.
16. 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.
17. Wade TP, Halaby IA, Stapleton DR, et al. Population-based analysis of treatment of pancreatic cancer and Whipple resection: Department of Defense hospitals, 1989-1994. Surgery 1996;120(4):680-5; discussion 686-7.
18. Edge SB, Schmieg RE, Jr., Rosenlof LK, et al. Pancreas cancer resection outcome in American University centers in 1989-1990. Cancer 1993;71(11):3502-8.
19. 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. In: Cmaj; 2003. p. 1409-14.
20. Rosemurgy AS, Bloomston M, Serafini FM, Coon B, Murr MM, Carey LC. Frequency with which

surgeons undertake pancreaticoduodenectomy determines length of stay, hospital charges, and in-hospital mortality. J Gastrointest Surg 2001;5:21-26.
21. Parks RW, Bettschart V, Frame S, Stockton DL, Brewster DH, Garden OJ. Benefits of specialization in the management of pancreatic cancer: Results of a Scottish population-based study. Br J Cancer 2004;91:459-65.
22. Dudley RA, Johansen KL, Brand R, et al. Selective referral to high-volume hospitals: estimating potentially avoidable deaths. JAMA 2000;283(9):1159-66.
23. Gordon TA, Bowman HM, Tielsch JM, et al. Statewide regionalization of pancreaticoduodenectomy and its effect on in-hospital mortality. Ann Surg 1998;228(1):71-8.
24. Goodney PP, Stukel TA, Lucas FL, et al. Hospital volume, length of stay, and readmission rates in high-risk surgery. Ann Surg 2003;238(2):161-7.
25. National Healthcare Quality Report. In: Agency for Healthcare Research and Quality; 2003.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Fosters true quality improvement. One possible adverse effect of volume-based measures is to encourage low-volume providers (who may also provide poorer quality of care) to increase their volume, simply to reach a threshold number of cases per year. Such responses would probably not improve patient outcomes to the same extent as moving patients from low-volume to high-volume hospitals. At the extreme, hospitals may loosen eligibility criteria and perform procedures on patients who are marginal or inappropriate candidates. The alternative of shutting down low-volume hospitals and transferring procedures to high-volume hospitals may overload these providers and impair access to care. None of these hypothesized effects has been empirically evaluated or demonstrated. Indeed, based on the Nationwide Inpatient Sample, the proportion of procedures performed at high-volume centers (>18 procedures/year) increased from 30%in 1998 to 39% in 2003, coincident with a decrease in overall inpatient mortality from 7.8% to 4.6%.27

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Comparative Data for the IQI based on the 2008 Nationwide Inpatient Sample (NIS):

	Sex
1,109	Males
1,117	Females
	Age
134	18 to 39
960	40 to 64
673	65 to 74
459	75+
1,049	Medicare
129	Medicaid
1,034	Other

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:
Comparative Data for the IQI based on the 2008 Nationwide Inpatient Sample (NIS)

	Sex
1,109	Males
1,117	Females
	Age
134	18 to 39

1b
C ☐
P ☐
M ☐
N ☐

960 40 to 64
673 65 to 74
459 75+

1,049 Medicare
129 Medicaid
1,034 Other

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.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. Higher volumes have been associated with better outcomes, which represent better quality.

1c.2-3. Type of Evidence: Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Higher volumes have been repeatedly associated with better outcomes after pancreatic surgery, although these findings may be limited by inadequate risk adjustment of the outcome measure.
One study used clinical data to estimate the association between hospital volume and mortality following pancreatic cancer surgery. Begg et al. analyzed retrospective data from the Surveillance, Epidemiology, and End Results (SEER)-Medicare linked database from 1984 through 1993. [1] The crude 30-day mortality rate was 12.9% at hospitals performing 1-5 pancreatic resections during the study period, versus 7.7% and 5.8% at hospitals performing 610 and 11 or more procedures, respectively. The association between volume and mortality remained highly significant (p<.001) in a multivariate model, adjusting for comorbidities, cancer stage and volume, and age.
Lieberman et al. used 1984-91 hospital discharge data from New York State to analyze the association between mortality after pancreatic cancer resection and hospital volumes. [2] Adjusting for the year of surgery, age, sex, race, payer source, transfer status, and the total number of secondary diagnoses, the standardized mortality rate was 19% at minimal-volume hospitals (fewer than 10 patients during the study period); 12% at low-volume hospitals (10-50 patients); 13% at medium-volume hospitals (51-80 patients); and 6% at high-volume hospitals (more than 80 patients). Studies using data from Ontario and Medicare data have generated similar results. [3] [4]

Empirical evidence shows that pancreatic resection volume—after adjusting for age, sex, and APR-DRG—is independently and negatively correlated with mortality for pancreatic resection (r=-.41, p<.001). [5]

Empirical evidence shows that a low percentage of procedures were performed at high-volume hospitals. At threshold 1, 30.3% of pancreatic resection procedures were performed at high-volume providers (and 5.1% of providers are high volume). [6] At threshold 2, 27.0% were performed at high-volume providers (and 4.2% of providers are high volume). [6] [7]

[1] Begg CB, Cramer LD, Hoskins WJ, et al. Impact of hospital volume on operative mortality for major cancer surgery. JAMA 1998;280(20):1747-51.
[2] Lieberman MD, Kilburn H, 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.
[3] Simunovic M, To T, Theriault M, et al. Relation between hospital surgical volume and outcome for pancreatic resection for neoplasm in a publicly funded health care system [see comments]. Cmaj 1999;160(5):643-8.
[4] Birkmeyer JD, Finlayson SR, Tosteson AN, et al. Effect of hospital volume on in-hospital mortality with

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pancreaticoduodenectomy. Surgery 1999;125(3):250-6.
[5] Nationwide Inpatient Sample.
[6] Glasgow RE, Mulvihill SJ. Hospital volume influences outcome in patients undergoing pancreatic resection for cancer. West J Med 1996;165(5):294-300.
[7] Nationwide Inpatient Sample and State Inpatient Databases. Healthcare Cost and Utilization Project. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/data/hcup

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):** Not Applicable. 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 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://www.qualityindicators.ahrq.gov/Downloads/Software/SAS/V31/iqi_guide_v31.pdf
Note: 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*):
1. Glasgow RE, Mulvihill SJ. Hospital volume influences outcome in patients undergoing pancreatic resection for cancer. West J Med 1996;165(5):294-300.
2. Owings MF, Kozak LJ. Ambulatory and inpatient procedures in the United States, 1996. Vital Health Stat 13 1998(139):1-119.
3. Begg CB, Cramer LD, Hoskins WJ, et al. Impact of hospital volume on operative mortality for major cancer surgery. JAMA 1998;280(20):1747-51.
4. Gouma DJ, van Geenen RC, van Gulik TM, et al. Rates of complications and death after pancreaticoduodenectomy: risk factors and the impact of hospital volume; 2000.
5. 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.
6. Lieberman MD, Kilburn H, 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.
7. Sosa JA, Bowman HM, Gordon TA, et al. Importance of hospital volume in the overall management of pancreatic cancer. Ann Surg 1998;228(3):429-38.
8. Ho V, Heslin MJ. Effect of hospital volume and experience on in-hospital mortality for pancreaticoduodenectomy; 2003 Apr.
9. Finlayson EV, Goodney PP, Birkmeyer JD. Hospital volume and operative mortality in cancer surgery: a national study. In: Arch Surg; 2003. p. 721-5; discussion 726.
10. Finlayson EV, Birkmeyer JD. Effects of hospital volume on life expectancy after selected cancer operations in older adults: a decision analysis; 2003.
11. Simunovic M, To T, Theriault M, et al. Relation between hospital surgical volume and outcome for pancreatic resection for neoplasm in a publicly funded health care system [see comments]. Cmaj 1999;160(5):643-8.
12. Neoptolemos JP, Russell RC, Bramhall S, et al. Low mortality following resection for pancreatic and periampullary tumours in 1026 patients: UK survey of specialist pancreatic units. UK Pancreatic Cancer Group [see comments]. Br J Surg 1997;84(10):1370-6.
13. Birkmeyer JD, Finlayson SR, Tosteson AN, et al. Effect of hospital volume on in-hospital mortality with pancreaticoduodenectomy. Surgery 1999;125(3):250-6.
14. 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.
15. Birkmeyer JD, Stukel TA, Siewers AE, et al. Surgeon volume and operative mortality in the United States; 2003.
16. 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.
17. Wade TP, Halaby IA, Stapleton DR, et al. Population-based analysis of treatment of pancreatic cancer and Whipple resection: Department of Defense hospitals, 1989-1994. Surgery 1996;120(4):680-5; discussion 686-7.
18. Edge SB, Schmieg RE, Jr., Rosenlof LK, et al. Pancreas cancer resection outcome in American University centers in 1989-1990. Cancer 1993;71(11):3502-8.
19. 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. In: Cmaj; 2003. p. 1409-14.
20. Rosemurgy AS, Bloomston M, Serafini FM, Coon B, Murr MM, Carey LC. Frequency with which surgeons undertake pancreaticoduodenectomy determines length of stay, hospital charges, and in-hospital mortality. J Gastrointest Surg 2001;5:21-26.
21. Parks RW, Bettschart V, Frame S, Stockton DL, Brewster DH, Garden OJ. Benefits of specialization in the management of pancreatic cancer: Results of a Scottish population-based study. Br J Cancer 2004;91:459-65.
22. Dudley RA, Johansen KL, Brand R, et al. Selective referral to high-volume hospitals: estimating potentially avoidable deaths. JAMA 2000;283(9):1159-66.
23. Gordon TA, Bowman HM, Tielsch JM, et al. Statewide regionalization of pancreaticoduodenectomy and its effect on in-hospital mortality. Ann Surg 1998;228(1):71-8.
24. Goodney PP, Stukel TA, Lucas FL, et al. Hospital volume, length of stay, and readmission rates in high-risk surgery. Ann Surg 2003;238(2):161-7.
25. National Healthcare Quality Report. In: Agency for Healthcare Research and Quality; 2003.

http://www.qualityindicators.ahrq.gov/Downloads/Software/SAS/V31/iqi_guide_v31.pdf

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***):**
Hospital discharges, age 18 years and older, with ICD-9-CM codes for pancreatic resection procedure, stratified by benign and malignant disease.

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***):**
ICD-9-CM pancreatic resection procedure codes:
526
TOTAL PANCREATECTOMY
527
RADICAL PANCREATICODUODENECT
52.51
Proximal pancreatectomy
52.52
Distal pancreatectomy
52.53
Radical subtotal pancreatectomy
52.59
Other partial pancreatectomy

Exclude cases:
-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)

ICD-9-CM codes:
577.0
Acute pancreatitis

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Not applicable

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***):**
Not applicable

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Not applicable

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Not applicable

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Not applicable

2a-specs
C☐
P☐
M☐
N☐

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: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
Not applicable

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Count
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***):**
The volume is the count of the number of discharges with a procedure for pancreatic resection per hospital.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Performance discrimination is based on pre-defined thresholds derived from the literature. Threshold 1: 10 or more procedures per year Threshold 2: 11 or more procedures per year

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)***:** AHRQ 2007 State Inpatient Databases (SID) with 4,000 hospitals and 30 million adult discharges

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
Expert panels and empirical analysis

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
Pancreatic Resection Volume is measured accurately with discharge data. Most facilities perform 10 or fewer esophagectomies for cancer during a 5 year
period (see Section 2f for updated testing results on the number of procedures per hospital)

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.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

2c.2 Analytic Method *(type of validity & rationale, method for testing)***:**
Empirical analysis of risk-adjusted mortality rates by hospital volume (benign and malignant cases)

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

Risk-adjusted Mortality Rates (raw rates = numerator / denominator) by Volume Decile (population weighted)

Summary: There is a strong volume-outcome relationship, in particular among hospitals performing 20 or fewer procedures per year. The volume-outcome relationship is similar among benign and malignant cases.

All Cases:

Column 1: Volume Decile
Column 2: Number of Hospitals
Column 3: Number of Patients
Column 4: Ave. Volume
Column 5: Risk-Adjusted Mortality Rate (numerator / denominator)

1	781	1480	2.46	0.0815
2	219	1562	7.56	0.0726
3	100	1308	13.24	0.0569
4	70	1423	20.58	0.0479
5	43	1415	33.61	0.0365

2c
C☐
P☐
M☐
N☐

6	29	1445	50.32	0.0305
7	21	1386	66.31	0.0182
8	15	1415	96.46	0.0263
9	*	1426	144.69	0.0254
10	*	1365	236.91	0.0147

* Fewer than 11 hospitals

Benign Cases:

Column 1: Volume Decile
Column 2: Number of Hospitals
Column 3: Number of Patients
Column 4: Ave. Volume
Column 5: Risk-Adjusted Mortality Rate (numerator / denominator)

1	600	763	1.43	0.0651
2	206	787	3.99	0.0658
3	68	433	6.40	0.0600
4	73	664	9.22	0.0653
5	52	747	14.59	0.0378
6	27	574	21.59	0.0418
7	23	687	30.05	0.0189
8	15	654	44.23	0.0229
9	*	620	69.58	0.0293
10	*	654	95.66	0.0138

* Fewer than 11 hospitals

Malignant Cases:

Column 1: Volume Decile
Column 2: Number of Hospitals
Column 3: Number of Patients
Column 4: Ave. Volume
Column 5: Risk-Adjusted Mortality Rate (numerator / denominator)

1	570	914	1.95	0.0885
2	149	722	4.97	0.0811
3	93	790	8.64	0.0430
4	58	772	13.55	0.0406
5	36	752	21.32	0.0320
6	23	694	30.29	0.0218
7	22	859	39.39	0.0305
8	12	657	55.90	0.0275
9	*	894	91.57	0.0158
10	*	588	155.98	0.0172

* Fewer than 11 hospitals

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
C ☐
P ☐
M ☐
N ☐
NA ☐

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

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

2e. Risk Adjustment for Outcomes/ Resource Use Measures

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

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
Not applicable

2e.3 Testing Results *(risk model performance metrics)*:
Not applicable

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

2e
C☐
P☐
M☐
N☐
NA☐

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)*:
Empirical analysis of the number of hospitals by volume (both benign and malignant cases)

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:

Volume	Number of Hospitals
Fewer than 10	967
10-19	156
20-29	53
30-39	24
40-49	21
50-59	14
60-69	15
70 or More	36
Total	1,286

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)*: Not applicable

2h
C☐
P☐
M☐
N☐

2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans: Not applicable	**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 Illinois (state hospital association) Illinois Hospitals Caring for You www.illinoishospitals.org Kentucky (Norton Healthcare, a hospital system) Norton Healthcare Quality Report http://www.nortonhealthcare.com/body.cfm?id=157 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	**3a** **C** ☐ **P** ☐ **M** ☐ **N** ☐

http://www.myhealthfinder.com/wa09/index.php

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).

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/

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?** Other measure is based on the AHRQ QI specification, but volume not reported separately	**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 QI reports separate volume and mortality, which is risk-adjusted 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:** The AHRQ QI is associated with a risk-adjusted mortality measure	**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.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.**	**4c** C☐ P☐ M☐ N☐ NA ☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences	**4d**

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. Pancreatic resection is measured accurately with discharge data. Most facilities perform 10 or fewer pancreatectomies for cancer during a 5year period; therefore, this indicator is expected to have poor precision.	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:** Low-volume providers may attempt to increase their volume without improving quality of care by performing the procedure on patients who may not qualify or benefit from the procedure. Additionally, shifting procedures to high-volume providers may impair access to care for certain types of patients. 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
Joh, Bott, MSSW, MBA, david.atkins@ahrq.hhs.gov, 301-427-1317-

Co.5 Submitter If different from Measure Steward POC
Joh, Bott, MSSW, MBA, david.atkins@ahrq.hhs.gov, 301-427-1317-, Agency for Healthcare Research and Quality

Co.6 Additional organizations that sponsored/participated in measure development
UC Davis,
Stanford University,
Battelle Memorial Institute

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 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