



## Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

### Brief Measure Information

**NQF #:** 0751

**Corresponding Measures:**

**De.2. Measure Title:** Risk Adjusted Urinary Tract Infection Outcome Measure After Surgery

**Co.1.1. Measure Steward:** American College of Surgeons

**De.3. Brief Description of Measure:** Risk adjusted, case mix adjusted urinary tract infection outcome measure of adults 18+ years after surgical procedure.

**1b.1. Developer Rationale:** It is anticipated that the performance gap identified can be narrowed or eliminated based on robust performance feedback, consistent with NSQIP experience in the past. See below for description of gap.

**S.4. Numerator Statement:** The outcome of interest is a hospital-specific assessment of risk-adjusted Urinary Tract Infection (UTI: as defined by American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) defined below) within 30 days of any listed (CPT) surgical procedure: the list of eligible CPT codes is attached separately.

**S.6. Denominator Statement:** Patients undergoing any of the listed (CPT) surgical procedures- list is attached separately. Specifically excluded are certain CPTs involving the urinary tract (excluded: 50220, 50545, 50400, 50205, 51040, 54640, 53852, 55866, 52450, 52234). See attached submitted list of eligible CPT codes.

**S.8. Denominator Exclusions:** Major trauma and transplant surgeries are excluded as are surgeries not on the supplied CPT list as eligible for selection. Patients who are ASA 6 (brain-death organ donor) are not eligible surgical cases.

A patient who has a second surgical procedure performed within 30 days after an index procedure cannot be accrued into the measure as a new (second) index procedure since the measure is based on 30 day outcomes.

**De.1. Measure Type:** Outcome

**S.17. Data Source:** Documentation of original self-assessment, Electronic Health Records, Lab data, Management Data, Other, Paper medical record/flow-sheet, Pharmacy data

**S.20. Level of Analysis:** Facility/Agency, Other, Population : Regional and State, Population : Regional/network

**IF Endorsement Maintenance – Original Endorsement Date:** Jan 17, 2012 **Most Recent Endorsement Date:** Jan 17, 2012

**IF this measure is included in a composite, NQF Composite#/title:**

**IF this measure is paired/grouped, NQF#/title:**

**De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?**

### 1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.**

**1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form**

0751\_Evidence\_MSF5.0\_Data.doc

**1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?**

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

**1b. Performance Gap**

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

**1b.1. Briefly explain the rationale for this measure** (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

*If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.*

It is anticipated that the performance gap identified can be narrowed or eliminated based on robust performance feedback, consistent with NSQIP experience in the past. See below for description of gap.

**1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis.** *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

Despite the proven benefit of certain policies and procedures aimed at reducing urinary tract infections such as bladder scanners, fewer than 33% hospitals are using bladder scanners and less than 10% conduct daily, automated reminders that prompt doctors to review the need for a catheter. Asking over 700 hospitals about its infection control methods, researchers found no consistently applied strategies to combat urinary tract infections.

UTI rates are highly variable by institution. An analysis of ACS NSQIP data calculated the risk-adjusted observed to expected (O/E) ratios for UTI using the methodology for the measure proposed herein. The results show that O/E ratios for UTI range from 0 to 3.16 for all participating hospitals. Therefore, the worst-performing hospital had 3 times the expected number of UTIs after adjusting for the patient case mix. The interquartile range for O/E ratios is 0.37-1.70, and the 10th percentile and 90th percentile O/E ratios were 0.65 and 1.27, respectively. These statistics demonstrate the significance of the performance gap in UTI outcomes across hospital providers.

**1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**

10. Saint S, Kaufman SR, Thompson M, Rogers MA, Chenoweth CE. A reminder reduces urinary catheterization in hospitalized patients. *Jt Comm J Qual Patient Saf.* Aug 2005;31(8):455-462.
11. Saint S, Lipsky BA. Preventing Catheter-Related Bacteriuria: Should We? Can We? How? *Arch Intern Med.* April 26, 1999 1999;159(8):800-808.
12. Hazelett SE, Tsai M, Gareri M, Allen K. The association between indwelling urinary catheter use in the elderly and urinary tract infection in acute care. *BMC Geriatr.* 2006;6:15.
13. Munasinghe RL, Yazdani H, Siddique M, Hafeez W. Appropriateness of use of indwelling urinary catheters in patients admitted to the medical service. *Infect Control Hosp Epidemiol.* Oct 2001;22(10):647-649.
14. Gokula RM, Smith MA, Hickner J. Emergency room staff education and use of a urinary catheter indication sheet improves appropriate use of foley catheters. *Am J Infect Control.* Nov 2007;35(9):589-593.
15. Fakih MG, Dueweke C, Meisner S, et al. Effect of Nurse-Led Multidisciplinary Rounds on Reducing the Unnecessary Use of Urinary Catheterization in Hospitalized Patients. *Infection Control and Hospital Epidemiology.* 2008;29(9):815-819.
16. Gokula RR, Hickner JA, Smith MA. Inappropriate use of urinary catheters in elderly patients at a midwestern community teaching hospital. *Am J Infect Control.* Jun 2004;32(4):196-199.
17. Gould CV, Umscheid CA, Argawal R, Kuntz G, Pegues D, HICPAC. Guideline for Prevention of Catheter-associated Urinary Tract Infections, 2008. Atlanta, GA 2009.
18. Phipps S, Lim YN, McClinton S, Barry C, Rane A, N"Dow J. Short term urinary catheter policies following urogenital surgery in adults. *Cochrane Database Syst Rev.* 2006(2):CD004374.

19. Tang KK, Wong CK, Lo SF, Ng TK. Is it necessary to catheterise the bladder routinely before gynaecological laparoscopic surgery? Aust N Z J Obstet Gynaecol. Oct 2005;45(5):380-383.
20. Iorio R, Healy WL, Patch DA, Appleby D. The role of bladder catheterization in total knee arthroplasty. Clin Orthop Relat Res. Nov 2000(380):80-84.

**1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability.** *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

Certain patient-related factors have been associated with an increased risk of UTI, including: advanced age, and gender, as well as characteristics associated with certain population groups such as hyperglycemia/diabetes, and other comorbidities.

**1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4**

Saint S, Lipsky BA. Preventing Catheter-Related Bacteriuria: Should We? Can We? How? Arch Intern Med. April 26, 1999 1999;159(8):800-808.

Saint S, Kaufman SR, Thompson M, Rogers MA, Chenoweth CE. A reminder reduces urinary catheterization in hospitalized patients. Jt Comm J Qual Patient Saf. Aug 2005;31(8):455-462.

Hazelett SE, Tsai M, Gareri M, Allen K. The association between indwelling urinary catheter use in the elderly and urinary tract infection in acute care. BMC Geriatr. 2006;6:15.

Munasinghe RL, Yazdani H, Siddique M, Hafeez W. Appropriateness of use of indwelling urinary catheters in patients admitted to the medical service. Infect Control Hosp Epidemiol. Oct 2001;22(10):647-649.

Gokula RM, Smith MA, Hickner J. Emergency room staff education and use of a urinary catheter indication sheet improves appropriate use of foley catheters. Am J Infect Control. Nov 2007;35(9):589-593.

Fakih MG, Dueweke C, Meisner S, et al. Effect of Nurse-Led Multidisciplinary Rounds on Reducing the Unnecessary Use of Urinary Catheterization in Hospitalized Patients. Infection Control and Hospital Epidemiology. 2008;29(9):815-819.

Gokula RR, Hickner JA, Smith MA. Inappropriate use of urinary catheters in elderly patients at a midwestern community teaching hospital. Am J Infect Control. Jun 2004;32(4):196-199.

Saint S, Meddings JA, Calfee D, Kowalski CP, Krein SL. Catheter-associated urinary tract infection and the Medicare rule changes. Ann Intern Med. Jun 16 2009;150(12):877-884.

Saint S, Lipsky BA. Preventing Catheter-Related Bacteriuria: Should We? Can We? How? Arch Intern Med. April 26, 1999 1999;159(8):800-808.

Gould CV, Umscheid CA, Argawal R, Kuntz G, Pegues D, HICPAC. Guideline for Prevention of Catheter-associated Urinary Tract Infections, 2008. Atlanta, GA 2009.

## 2. Reliability and 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. **Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

**2a.1. Specifications** The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

**De.5. Subject/Topic Area** (check all the areas that apply):

**De.6. Non-Condition Specific**(check all the areas that apply):

**De.7. Target Population Category** (Check all the populations for which the measure is specified and tested if any):

Elderly

**S.1. Measure-specific Web Page** (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

**S.2a. If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

**Attachment:**

**S.2b. Data Dictionary, Code Table, or Value Sets** (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

**Attachment Attachment:** [Parsimonious\\_Model\\_and\\_CPT\\_List\\_for\\_UTI\\_Measure\\_080910-634169748621065238.doc](#)

**S.2c. Is this an instrument-based measure** (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

**Attachment:**

**S.2d. Is this an instrument-based measure** (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

**S.3.1. For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

**S.3.2. For maintenance of endorsement**, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

**S.4. Numerator Statement** (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

*IF an OUTCOME MEASURE*, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

The outcome of interest is a hospital-specific assessment of risk-adjusted Urinary Tract Infection (UTI: as defined by American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP)defined below) within 30 days of any listed (CPT) surgical procedure: the list of eligible CPT codes is attached separately.

**S.5. 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, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in

required format at S.2b)

*IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*

Within 30 days after the index procedure, Postoperative symptomatic urinary tract infection must meet ONE of the following TWO criteria:

Criterion One:

One of the following five:

- a. fever (>38 degrees C),
- b. urgency,
- c. frequency,
- d. dysuria,
- e. suprapubic tenderness

AND a urine culture of > 100,000 colonies/ml urine with no more than two species of organisms.

OR

Criterion Two:

Two of the following five:

- a. fever (>38 degrees C),
- b. urgency,
- c. frequency,
- d. dysuria,
- e. suprapubic tenderness

AND ANY ONE or MORE of the following seven:

- a. Dipstick test positive for leukocyte esterase and/or nitrate,
- b. Pyuria (>10 WBCs/mm<sup>3</sup> or > 3 WBC/hpf of unspun urine),
- c. Organisms seen on Gram stain of unspun urine,
- d. Two urine cultures with repeated isolation of the same uropathogen with >100 colonies/ml urine in non-voided specimen,
- e. Urine culture with < 100,000 colonies/ml urine of single uropathogen in patient being treated with appropriate antimicrobial therapy,
- f. Physician's diagnosis,
- g. Physician institutes appropriate antimicrobial therapy

Cases are excluded if the patient is identified as having a symptomatic urinary tract infection at the time surgery commences (present preoperatively), or is in a treatment course for such infection at the time surgery commences.

**S.6. Denominator Statement** (Brief, narrative description of the target population being measured)

Patients undergoing any of the listed (CPT) surgical procedures- list is attached separately. Specifically excluded are certain CPTs involving the urinary tract (excluded: 50220, 50545, 50400, 50205, 51040, 54640, 53852, 55866, 52450, 52234). See attached submitted list of eligible CPT codes.

**S.7. Denominator Details** (All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

*IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*

Cases are collected so as to match ACS NSQIP inclusion and exclusion criteria, using the supplied CPT code eligibility list, thereby permitting valid application of ACS NSQIP model-based risk adjustment. Participation in NSQIP is not a requirement- see 2a25.

**S.8. Denominator Exclusions** (Brief narrative description of exclusions from the target population)

Major trauma and transplant surgeries are excluded as are surgeries not on the supplied CPT list as eligible for selection. Patients who are ASA 6 (brain-death organ donor) are not eligible surgical cases.

A patient who has a second surgical procedure performed within 30 days after an index procedure cannot be accrued into the

measure as a new (second) index procedure since the measure is based on 30 day outcomes.

**S.9. Denominator Exclusion Details** (All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

Major trauma and solid organ transplant cases have been excluded traditionally from the NSQIP so there is currently no data within the NSQIP on these cases. Historically the reason for this was the existence of highly specialized databases maintained by the various trauma and transplant organizations that were felt to be of higher specific utility for these cases. In addition, these patients and procedures carry very specific and complex risk profiles, yet are not necessarily common across institutions, magnifying risk adjustment and procedure adjustment challenges. Therefore, a patient who is admitted to the hospital with acute trauma and has surgery for that trauma is excluded though any operation performed after the patient has been discharged from the trauma stay can be included. A patient who is admitted to the hospital for a transplant and has a transplant procedure and any additional surgical procedures during the transplant hospitalization will be excluded, though any operation performed after the patient has been discharged from the transplant stay is eligible for selection. Donor procedures on living donors are NOT excluded unless meeting other exclusion criteria.

If surgeries (CPT codes) do not appear on the supplied list (attached) of CPT codes, they are not eligible for selection. A patient classified as ASA Class 6 is not eligible for inclusion.

**S.10. Stratification Information** (Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)

There is no stratification of the measure, it is risk-adjusted by the variables defined below.

Note: if an implementation required stratification by race or ethnicity post-hoc, then race/ethnicity variables could be added to the implementation with no other changes necessary under the measure.

Risk adjustment variables (five):

1. "CPT Risk" (Log Odds CPT Group: scalar continuous variable, derived as specified under Risk Adjustment Methodology 2a14).

2. Preoperative Functional Status: Independent, Partially Dependent, Totally Dependent. This variable focuses on the patient's abilities to perform activities of daily living (ADLs) in the 30 days prior to surgery. Activities of daily living are defined as 'the activities usually performed in the course of a normal day in a person's life'. ADLs include: bathing, feeding, dressing, toileting, and mobility. Report the corresponding level of self-care for activities of daily living demonstrated by this patient at the time the patient is being considered as a candidate for surgery (which should be no longer than 30 days prior to surgery). Report the level of functional health status as defined by the following criteria.

(1) Independent: The patient does not require assistance from another person for any activities of daily living. This includes a person who is able to function independently with prosthetics, equipment, or devices.

(2) Partially dependent: The patient requires some assistance from another person for activities of daily living. This includes a person who utilizes prosthetics, equipment, or devices but still requires some assistance from another person for ADLs.

(3) Totally dependent: The patient requires total assistance for all activities of daily living.

(4) Unknown: If unable to ascertain the functional status in the specified time period report as unknown.

All patients with psychiatric illnesses should be evaluated for their ability to function with or without assistance with ADLs just as the non-psychiatric patient. For instance, if a patient with schizophrenia is able to care for him/herself without the assistance of nursing care, he/she is considered independent.

3. Gender: Female/Male.

4. American Society of Anesthesiology Physical Status Classification ("ASA Class"). [Note: ASA Class 6-EXCLUDED from Eligibility].

Record the American Society of Anesthesiology (ASA) Physical Status Classification of the patient's present physical condition on a scale from 1-6 as it appears on the anesthesia record. Most likely there will be a 2nd assessment of the ASA class prior to anesthesia induction. If this is available, report this most recent assessment. Some hospitals may note the ASA classification as the 'Acuity Code'. The classifications are as follows:

ASA 1 - Normal healthy patient.



ASA 2 - Patient with mild systemic disease.  
ASA 3 - Patient with severe systemic disease.  
ASA 4 - Patient with severe systemic disease that is a constant threat to life.  
ASA 5 - Moribund patient who is not expected to survive without the operation.  
ASA 6 - Declared brain-dead patient whose organs are being removed for donor purposes (ASA 6 cases should be excluded).  
None assigned – For cases performed under local anesthesia that meet inclusion criteria but do not have an ASA class assigned, report as "none assigned".

5.Age Group (years): <65yo, 65 - 74, 75 - 84, >= 85.

**S.11. Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)

Statistical risk model

If other:

**S.12. Type of score:**

Ratio

If other:

**S.13. 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

**S.14. Calculation Algorithm/Measure Logic** (Diagram or 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; time period for data, aggregating data; risk adjustment; etc.)

For data collected during the one year time interval at each hospital: (a) O = the number of observed adverse events (UTI) at the hospital; (b) using parameters from the described model, compute predicted event probabilities for each patient in the hospital's data set; (c) the sum of these predicted probabilities defines E for the institution; (d) compute the hospital's O/E ratio and applicable confidence intervals. See also the risk adjustment methodology section and the attached document specifying CPT codes and the parameters of the risk model.

**S.15. Sampling** (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed. For each data collection year, hospitals would need to estimate their number of qualifying surgeries. Based on that denominator and the required sample size to achieve reliability of 0.4 (minimum of 290 cases- see Risk-adjustment Methodology section 2a14), hospitals would take a systematic sample (e.g., every 3rd qualifying case), to achieve the minimum sample size. In the event that the required sample size cannot be achieved due to low hospital volume, hospitals would collect data on all eligible patients.

**S.16. Survey/Patient-reported data** (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

**S.17. Data Source** (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Documentation of original self-assessment, Electronic Health Records, Lab data, Management Data, Other, Paper medical record/flow-sheet, Pharmacy data

**S.18. Data Source or Collection Instrument** (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

Data sources are as above.

The model is based on historical ACS NSQIP data. Data collection is consistent with historical ACS NSQIP approaches. Modeling is

based on ACS NSQIP data but measure would not require participation in ACS NSQIP. Implementation by an organization (such as CMS) would involve hospitals transmitting the limited data set specified for the procedures specified to the central implementing organization. Risk adjustment modeling would be performed centrally and institutions would receive results back. Institutions would not have any analytic burden. The implementing organization would also inform institutions of the auditing paradigm for submitted data. NSQIP participation is not required, though institutions participating in NSQIP would already collect all requisite data. The measure has specifically been designed with a very parsimonious, low-burden data requirement so that NSQIP participation would not be required and the burden on hospitals for this measure would be acceptable.

**S.19. Data Source or Collection Instrument** (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

URL

**S.20. Level of Analysis** (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility/Agency, Other, Population : Regional and State, Population : Regional/network

**S.21. Care Setting** (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Ambulatory Care : Hospital Outpatient, Hospital

If other:

**S.22. COMPOSITE Performance Measure** - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

## 2. Validity – See attached Measure Testing Submission Form

0751\_MeasureTesting\_MSF5.0\_Data.doc

### 2.1 For maintenance of endorsement

*Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.*

### 2.2 For maintenance of endorsement

*Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.*

### 2.3 For maintenance of endorsement

*Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1,2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.*

## 3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

### 3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).



**3a.1. Data Elements Generated as Byproduct of Care Processes.**

generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition, Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)

If other:

**3b. Electronic Sources**

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

**3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields)** Update this field for **maintenance of endorsement**.

No

**3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

A completely electronic medical record would be needed to capture the risk factors that enter into the model- this is an institution specific issue. In addition, web based software (currently available to ACS NSQIP subscribers) can facilitate transfer of information from the EMR to a measure submission database.

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**

Attachment:

**3c. Data Collection Strategy**

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

**3c.1. Required for maintenance of endorsement.** Describe difficulties (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.

**IF instrument-based**, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

ACS NSQIP has been open to subscription by private sector hospitals since 2005. Ten years prior to this time the program was implemented in the U.S. Department of Veterans Affairs. Thus we have long term experience with in the data collection and operational use of the O/E ratio for quality improvement and benchmarking upon which this measure is based. Historically, the use of trained data collectors within ACS NSQIP and a comprehensive support system has resulted in high reliability of data and very few problems with missing data.

Data definitions are continually evaluated and inter-rater reliability audits are regularly performed.

ACS NSQIP has placed a very high value on accuracy of data collection while maintaining a sample size large enough for statistical modeling and keeping within regulations for patient confidentiality. The methodology of our program has been highly successful with increasing numbers of participants every year, and measureable improvements in surgical outcomes over time based on the O/E ratios for mortality and various post surgical complications. Due to the much smaller number of variables needed for participation in this measure than in the full program, we expect that hospitals that are not ACS NSQIP participants will also be able to achieve highly reliable results.

**3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).**

**4. Usability and Use**

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

#### 4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

##### 4.1. Current and Planned Use

*NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.*

Specific Plan for Use	Current Use (for current use provide URL)

##### 4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

**4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

**4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

**4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

**4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**

**4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**

Describe how feedback was obtained.

**4a2.2.2. Summarize the feedback obtained from those being measured.**

**4a2.2.3. Summarize the feedback obtained from other users**

**4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**

**Improvement**

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

**4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**

**If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**

**4b2. Unintended Consequences**

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

**4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**

Based upon experience with ACS NSQIP data collection, there are very few problems with errors or inaccuracies. Data collectors in the ACS NSQIP receive extensive training and support for accurate data collection. Similar online training would be available for this measure. In addition, data collectors are audited in NSQIP for inter-rater reliability and are held to a 95% or better concordance rate for all variables. Similarly, chart audits have been planned in accordance with CMS stipulations for measure participants who are not ACS NSQIP participants.

**4b2.2. Please explain any unexpected benefits from implementation of this measure.**

## 5. Comparison to Related or 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.

**5. Relation to Other NQF-endorsed Measures**

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

**5.1a. List of related or competing measures (selected from NQF-endorsed measures)**

**5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.**

**5a. Harmonization of Related Measures**

The measure specifications are harmonized with related measures;

**OR**

The differences in specifications are justified

**5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed**

**measure(s):**

**Are the measure specifications harmonized to the extent possible?**

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

#### **5b. Competing Measures**

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

**OR**

Multiple measures are justified.

**5b.1. If this measure conceptually addresses 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.)**

[Risk adjustment approach, spectrum of included cases, rigorous definition of and experience with variables.](#)

[Related Measures: #0138, Urinary catheter-associated urinary tract infection for intensive care unit \(ICU\) patients](#)

## **Appendix**

**A.1 Supplemental materials may be provided in an appendix.** All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

**Attachment:**

## **Contact Information**

**Co.1 Measure Steward (Intellectual Property Owner):** [American College of Surgeons](#)

**Co.2 Point of Contact:** [Karen, Richards, krichards@facs.org, 312-202-5282-](#)

**Co.3 Measure Developer if different from Measure Steward:** [American College of Surgeons](#)

**Co.4 Point of Contact:** [Karen, Richards, krichards@facs.org, 312-202-5282-](#)

## **Additional Information**

**Ad.1 Workgroup/Expert Panel involved in measure development**

**Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

[Clifford Ko](#)

[Karen Richards](#)

[Bruce Hall](#)

[Mark Cohen](#)

[Mehul Raval](#)

[Mira Shiloach](#)

[Angela Ingraham](#)

[Stanley Frencher](#)

[This group used ACS NSQIP data to develop the statistical risk-adjusted model on which this measure is based. The workgroup also reviewed and summarized the literature that supports the importance of using this measure to as a tool to improve surgical quality.](#)

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2 Year the measure was first released:**

**Ad.3 Month and Year of most recent revision:**

**Ad.4 What is your frequency for review/update of this measure?**

**Ad.5 When is the next scheduled review/update for this measure?**

**Ad.6 Copyright statement: UPDATED CONDITIONS SECTION:**

Type of measure \* Outcome

Four conditions must be met before a proposed measure may be considered and evaluated for suitability as voluntary consensus standards:

A. The measure steward is a governmental organization or a 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.

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

Please check if either of the following apply

Proprietary measure

Measure Steward Agreement \*

Agreement will be signed and submitted prior to or at the time of measure submission

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 every 3 years. \*

Yes, information will be provided in the contact section (in the Additional tab)

C. The intended use of the measure includes both public reporting and quality improvement.

Purpose \*

Public reporting

Internal quality improvement

Additional purposes

None

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 24 months of endorsement.

Testing \*

Yes, tested, as reported above.

Have NQF-endorsed® measures been reviewed to identify if there are similar or related measures? \*

If there are similar or related measures, be sure to address those items in the Usability tab.

Yes, as above.

**Ad.7 Disclaimers:**

**Ad.8 Additional Information/Comments:**