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 #:** 0527 **NQF Project:** Surgery Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Prophylactic antibiotic received within 1 hour prior to surgical incision
De.2 **Brief description of measure***:* Surgical patients with prophylactic antibiotics initiated within one hour prior to surgical incision. Patients who received vancomycin or a fluoroquinolone for prophylactic antibiotics should have the antibiotics initiated within two hours prior to surgical incision. Due to the longer infusion time required for vancomycin or a fluoroquinolone, it is acceptable to start these antibiotics within two hours prior to incision time.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Safety De.5 **IOM Quality Domain**: Safety De.6 **Consumer Care Need:** Staying healthy

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	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☒ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability, Payment incentive, Accreditation	**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*)**:** 1) 2a.21: Measure-specific data elements that are missing data cause the record to be rejected if any measure algorithm results in a Measure Category Assignment equals "X" (missing data). As noted by developer, rejected data must be corrected and resubmitted by the facility before the transmission deadline in order for it to be accepted by the warehouse. 2) 2b.1, 2f.2 &Ad.10: Note most recent performance report at 97.1% and consistent over several quarters; note performance in US Territories.	
Staff Reviewer Name(s): Melinda Murphy	

TAP/Workgroup Reviewer Name: NA	
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**: Safety - reduction in HAIs	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Frequently performed procedure, Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** There are over 40 million surgeries performed in the United States each year. Surgical site infection (SSIs) are the second most common cause of healthcare associated infections.SSIs account for 14-16% of all hospital-acquired infections and are among the most common complications of care, occurring in 2 to 5% of patients after clean extra-abdominal operations and up to 20 % of intra-abdominal procedures. Among surgical patients, SSIs account for 40% of all such hospital-acquired infections. By reducing SSIs, hospitals on average could recognize a savings of $3,152 and a reduction in extended length of stay by seven days on each patient developing an infection. 1a.4 **Citations for Evidence of High Impact:** Selected References: Zhan C, Miller MR. Excess length of stay, charges and mortality attributable to medical injuries during hospitalization. JAMA 2003; 290: 1868-1874.	**1a** C☐ P☐ M☐ N☐

Delgado-Rodriguez M, Sillero-Arenas M, Medina-Cuadros M, Martinez-Gallego G. Nosocomial infections in surgical patients: comparison of two measures of intrinsic patient risk. Infect Control Hosp Epidemiol 1997; 18: 19-23.

Polk HC, Christmas AB. Prophylactic antibiotics in surgery and surgical wound infections. Am Surg 200; 66: 105-111.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: An increase in the number of patients having timely antibiotic administration may reduce the incidence of surgical site infection.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
In a national sample of 39,000 Medicare patients undergoing surgery in US hospitals in 2001, the rate of surgeries that had antibiotics started within 60 minutes prior to incision was 55.7%. The rate of performance for second quarter 2010 (most recent data) was 97.1% with a denominator of 279,140 cases and a numerator of 271,088.

1b.3 Citations for data on performance gap:
The rate of performance for second quarter 2010 (most recent data) was 97.1% with a denominator of 279,140 and a numerator of 271,088. The # of hospitals reporting the data was 3570.

1b.4 Summary of Data on disparities by population group:
A disparities report is attached to this submission.

1b.5 Citations for data on Disparities:
The attached disparities report uses 2009 data from the clinical data warehouse.

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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*)**:** The desired outcome would be fewer surgical site infections. Since this is only one process in the care of surgery patients, it would be difficult to attribute a reduction in SSI to this one measure.

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

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
A goal of prophylaxis with antibiotics is to establish bactericidal tissue and serum levels at the time of skin incision. Studies performed in the 1960's and 1970's demonstrated that a common reason for failure of prophylaxis was delay of antibiotic administration until after the operation. In a study of 2,847 surgery patients at LDS Hospital in Salt Lake City, it was found that the lowest incidence of post-operative infection was associated with antibiotic administration during the one hour prior to surgery. The risk of infection increased progressively with greater time intervals between administration and skin incision. This relationship was observed whether antibiotics preceded or followed skin incision (Classen 1993).

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*)**:**
Various, RCTs performed and evidence supporting the measures

1c.6 Method for rating evidence: Classes and levels
Level A: Data derived from multiple randomized clinical trials
Level B: Data derived from a single randomized trial or from nonrandomized trials
Level C: Consensus expert opinion
Classification of Recommendations
Class I: Conditions for which there is evidence and/or general agreement that a given procedure is useful and effective
Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the

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usefulness/efficacy of a procedure
IIa: Weight of evidence favors usefulness/efficacy.
IIb: Usefulness/efficacy is less well established by evidence.
Class III: Conditions for which there is evidence and/or general agreement that the procedure is not useful/effective

1c.7 **Summary of Controversy/Contradictory Evidence:** There have been no studies that contradict the guidelines for surgical site infection prevention.

1c.8 **Citations for Evidence (***other than guidelines***):** Burke JF. The effective period of preventive antibiotic action in experimental
incisions and dermal lesions. Surgery 1961; 50:161–8.
Polk HC Jr, Lopez-Mayor JF. Postoperative wound infection: a prospective
study of determinant factors and prevention. Surgery 1969;
66:97–103.
Stone HH, Hooper CA, Kolb LD, Geheber CE, Dawkins EJ. Antibiotic
prophylaxis in gastric, biliary and colonic surgery. Ann Surg 1976; 184:
443–52.
Polk HC Jr, Trachtenberg L, Finn MP. Antibiotic activity in surgical
incisions: the basis for prophylaxis in selected operations. JAMA
1980; 244:1353–4.
DiPiro JT, Vallner JJ, Bowden TA, Clark BA, Sisley JF. Intraoperative
serum and tissue activity of cefazolin and cefoxitin. Arch Surg 1985;
120:829–32.
Classen DC, Evans RS, Pestotnik SL, Horn SD, Menlove RL, Burke JP.
The timing of prophylactic administration of antibiotics and the risk
of surgical-wound infection. N Engl J Med 1992; 326:281–6.
Trick WE, Scheckler WE, Tokars JL, et al. Modifiable risk factors associated
with deep sternal site infection after coronary artery bypass
grafting. J Thorac Cardiovasc Surg 2000; 119:108–14.
Burke JP. Maximizing appropriate antibiotic prophylaxis for surgical
patients: an update from LDS Hospital, Salt Lake City. Clin Infect Dis
2001; 33(Suppl 2):S78–83.
Garey KW, Dao T, Chen H, Amrutkar P, Kumar N, Reiter M, Gentry LO: Timing of vancomycin prophylaxis for cardiac surgery patients and the risk of surgical site infections.J Antimicrob Chemother 2006, 58:645-650.
VanKasteren MEE, Mannien J, Ott A, Kullberg BJ, DeBoer AS, Gyssens IC: Antibiotic prophylaxis and the risk of surgical site infections following total hip arthroplasty: Timely administration is the most important factor. Clin Infect Dis 2007, 44:921-927.
9. Bratzler DW, Houck PM: For the Surgical Infection Prevention Guideline Writers Workgroup. Antimicrobial prophylaxis for surgery: an advisory statement from the National Surgical Infection Prevention Project.
Am J Surg 2005, 189:395-404.

1c.9 **Quote the Specific guideline recommendation (***including guideline number and/or page number***):**
CDC HICPAC:Time the infusion of the initial dose of antimicrobial agent so that a bactericidal concentration of the drug is established in serum and tissues by the time the skin is incised
ASHP: At induction of anesthesia.
The Medical Letter: Parenteral prophylactic antimicrobials can be given as a single IV dose begun 60 minutes or less before the operation. If vancomycin or a fluoroquinolone is used, the infusion should be started 60-120 minutes before the initial incision in order to minimize the possibility of an infusion reaction close to the time of induction of anesthesia and to have adequate tissue levels at the time of incision.
ACOG: Only a narrow window of antimicrobial efficacy is available, requiring the administration of antibiotics either shortly before or at the time of bacterial inoculation (eg, when the incision is made, the vagina is entered, or the pedicles are clamped). The induction of anesthesia represents a convenient time (within an hour before the incision) for initiating antibiotic prophylaxis in major gynecologic procedures.
SHEA/IDSA: Administer prophylaxis within 1 hour before incision to maximize tissue concentration

1c.10 **Clinical Practice Guideline Citation:** - Page CP, Bohnen JM, Fletcher JR, McManus AT, Solumkin

JS,Wittman DH. Antimicrobial prophylaxis for surgical wounds: guidelines for clinical care. Arch Surg 1993; 128:79-88. - Dellinger EP, Gross PA, Barrett TL, et al. Quality standard for antimicrobial prophylaxis in surgical procedures. Infectious Diseases Society of America. Clin Infect Dis 1994; 18:422-7. - American Society of Health-System Pharmacists. ASHP therapeutic guidelines on antimicrobial prophylaxis in surgery. Am J Health Syst Pharm 1999; 56:1839-88. - Mangram AJ, Horan TC, Pearson ML, et al. Guideline for prevention of surgical site infection, 1999. Hospital Infection Control Practices Advisory Committee. Infect Control Hosp Epidemiol 1999; 20:250-78. -Antimicrobial prophylaxis in surgery. Med Lett Drugs Ther 2001; 43: 92-7. -ACOG Committee on Practice Bulletins. Antibiotic prophylaxis for gynecologic procedures. ACOG practice bulletin 104. Washington, DC: American College of Obstetricians and Gynecologists, May 2009. - Gilbert DN, Moellering RC, Sande MA. The Sanford guide to antimicrobial therapy. 40th ed. Hyde Park, VT: Antimicrobial Therapy, 2010:123-4. **1c.11 National Guideline Clearinghouse or other URL:** http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/ssi.pdf **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** Category IA **1c.13 Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)*: RANKINGS Category IA.Strongly recommended for implementation and supported by well-designed experimental, clinical, or epidemiological studies. Category IB.Strongly recommended for implementation and supported by some experimental, clinical, or epidemiological studies and strong theoretical rationale. Category II. Suggested for implementation and supported by suggestive clinical or epidemiological studies or theoretical rationale. No recommendation; unresolved issue. Practices for which insufficient evidence or no consensus regarding efficacy exists. **1c.14 Rationale for using this guideline over others:** "The Guideline for Prevention of Surgical Site Infection, 1999, provides recommendations concerning reduction of surgical site infection risk. Each recommendation is categorized on the basis of existing scientific data,theoretical rationale, and applicability." Mangram AJ, Horan TC, Pearson ML, Silver LC, Jarvis WR, the Hospital Infection Control Practices Advisory Committee. Guideline for prevention of surgical site infection 1999. Infect Control Hosp Epidemiol 1999;20:247-80.	
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*)**:** Number of surgical patients with prophylactic antibiotics initiated within one hour prior to surgical incision (two hours if receiving vancomycin, in Appendix C, Table 3.8, or a fluoroquinolone, in Appendix C, Table 3.10). **2a.2 Numerator Time Window** (*The time period in which cases are eligible for inclusion in the numerator*)**:** Admission to Surgical Incision Time **2a.3 Numerator Details** (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*)**:** Data Elements: Anesthesia Start Date Antibiotic Administration Date Antibiotic Administration Time Surgical Incision Date Surgical Incision Time	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured*)**:** All selected surgical patients with no evidence of prior infection. Table 5.10 is the complete table of selected major surgeries **2a.5 Target population gender:** Female, Male **2a.6 Target population age range:** Patients aged 18 and older **2a.7 Denominator Time Window** (*The time period in which cases are eligible for inclusion in the denominator*)**:** admission to discharge **2a.8 Denominator Details** (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*)**:** Included Populations: An ICD-9-CM Principal Procedure Code of selected surgeries (as defined in Appendix A, Table 5.10 for ICD-9-CM codes). AND An ICD-9-CM Principal Procedure Code of selected surgeries (as defined in Appendix A, Table 5.01-5.08 for ICD-9-CM codes).	
2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population*)**:** Patients less than 18 years of age Patients who have a Length of Stay greater than 120 days Patients who had a hysterectomy and a caesarean section performed during this hospitalization Patients who had a principal diagnosis suggestive of preoperative infectious diseases (as defined in Appendix A, Table 5.09 for ICD-9-CM codes) Patients whose ICD-9-CM principal procedure was performed entirely by Laparoscope Patients enrolled in clinical trials Patients whose ICD-9-CM principal procedure occurred prior to the date of admission Patients with physician/advanced practice nurse/physician assistant (physician/APN/PA) documented infection prior to surgical procedure of interest Patients who had other procedures requiring general or spinal anesthesia that occurred within 3 days (4 days for CABG or Other Cardiac Surgery) prior to or after the procedure of interest (during separate surgical	**2a-specs** C☐ P☐ M☐ N☐

episodes) during this hospital stay
Patients who were receiving antibiotics more than 24 hours prior to surgery
Patients who were receiving antibiotics within 24 hours prior to arrival (except colon surgery patients taking oral prophylactic antibiotics)

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Data Elements:
Admission Date
Antibiotic Received
Birthdate
Clinical Trial
Discharge Date
Infection Prior to Anesthesia
Laparoscope
Oral Antibiotics
Other Surgeries

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
The antibiotic prophylaxis measures are stratified according to surgery type. The tables are subsets of Table 5.10 (see link for Specification Manual and Appendix A, Tables 5.01 to 5.08. The specific procedures must be in the large table (Table 5.10) to be eligible for the SCIP measures. The measure specific tables for SCIP-Inf-1 are 5.01 to 5.08.

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***):**

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
1.Start processing. Run cases that are included in the Surgical Care Improvement Project (SCIP) Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.
2.Calculate Patient Age. The Patient Age, in years, is equal to the Admission Date minus the Birthdate. Use the month and day portion of admission date and birthdate to yield the most accurate age.
3.Check Patient Age
a.If the Patient Age is less than 18 years, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for Centers for Medicare and Medicaid Services (CMS). Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Patient Age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Procedure Code.
4.Check ICD-9-CM Principal Procedure Code
a.If the ICD-9-CM Principal Procedure Code is not on Table 5.01 or 5.02 or 5.03 or 5.04 or 5.05 or 5.06 or 5.07 or 5.08, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.01 or 5.02 or 5.03 or 5.04 or 5.05 or 5.06 or 5.07 or 5.08, continue processing and proceed to recheck ICD-9-CM Principal Procedure Code.
5.Recheck ICD-9-CM Principal Procedure Code
a.If the ICD-9-CM Principal Procedure Code is on Table 5.06 or 5.07, continue processing and check ICD-9-CM Other Procedure Code.
1.If any of the ICD-9-CM Other Procedure Codes are on Table 4.07, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.

2.If all of the ICD-9-CM Other Procedure Codes are missing or none are on Table 4.07, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.
b.If the ICD-9-CM Principal Procedure Code is not on Table 5.06 or 5.07, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.
6.Check ICD-9-CM Principal Diagnosis Code
a.If the ICD-9-CM Principal Diagnosis Code is on Table 5.09, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the ICD-9-CM Principal Diagnosis Code is not on Table 5.09, continue processing and proceed to Laparoscope.
7.Check Laparoscope
a.If Laparoscope is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If Laparoscope equals 1 or 3, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If Laparoscope equals 2, continue processing and proceed to Clinical Trial.
8.Check Clinical Trial
a.If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If Clinical Trial equals No, continue processing and proceed to Anesthesia Start Date.
9.Check Anesthesia Start Date
a.If the Anesthesia Start Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Anesthesia Start Date equals Unable To Determine, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission
c.If Anesthesia Start Date equals a Non Unable To Determine Value, continue processing and proceed to the Surgery Days calculation.
10.Calculate Surgery Days. Surgery Days, in days, is equal to the Anesthesia Start Date minus the Admission Date.
11.Check Surgery Days
a.If the Surgery Days is less than zero, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Surgery Days is greater than or equal to zero, continue processing and proceed to Infection Prior to Anesthesia.
12.Check Infection Prior to Anesthesia
a.If Infection Prior to Anesthesia is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If Infection Prior to Anesthesia equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If Infection Prior to Anesthesia equals No, continue processing and proceed to Other Surgeries.
13.Check Other Surgeries
a.If Other Surgeries is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If Other Surgeries equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.

c.If Other Surgeries equals No, continue processing and proceed to Surgical Incision Date.
14.Check Surgical Incision Date
a.If the Surgical Incision Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP- Inf-1a) for The Joint Commission.
b.If the Surgical Incision Date equals Unable To Determine, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If Surgical Incision Date equals a Non Unable To Determine Value, continue processing and proceed to Antibiotic Received.
15.Check Antibiotic Received
a.If Antibiotic Received equals 1 or 2, continue processing and proceed to recheck ICD-9-CM Principal Procedure Code
b.If Antibiotic Received equals 4, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If Antibiotic Received equals 3, continue processing and proceed to step 19 and check Antibiotic Name. Do not check ICD-9-CM Principal Procedure Code, Oral Antibiotics or Antibiotic Received.
16.Recheck ICD-9-CM Principal Procedure Code only if Antibiotic Received equals 1 or 2
a.If the ICD-9-CM Principal Procedure Code is not on Table 5.03, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.03, continue processing and proceed to check Oral Antibiotics.
17.Check Oral Antibiotics
a.If Oral Antibiotics is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b. If Oral Antibiotics equals No, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If Oral Antibiotics equals Yes, continue processing and proceed to recheck Antibiotic Received.
18.Recheck Antibiotic Received
a.If Antibiotic Received equals 1, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If Antibiotic Received equals 2, continue processing and proceed to Antibiotic Name.
19.Check Antibiotic Name
a.If the Antibiotic Grid is not populated, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate
(SCIP-Inf-1a) for The Joint Commission. Note: The front-end edits reject cases containing invalid data and/or an incomplete Antibiotic Grid. A complete Antibiotic Grid requires all data elements in the row to contain either a valid value and/or Unable to Determine.
b.If the Antibiotic Name is on Table 2.1, continue processing and proceed to Antibiotic Administration Route.
20.Check Antibiotic Administration Route
a.If the Antibiotic Administration Route is equal to 3 or 10 for all antibiotic doses, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Antibiotic Administration Route is equal to 1 or 2 for any antibiotic dose, continue processing and proceed to Antibiotic Administration Date. Proceed only with antibiotic doses on Table 2.1 that are administered via routes 1 or 2.
21.Check Antibiotic Administration Date
a.If the Antibiotic Administration Date is equal to Unable to Determine for all antibiotic doses, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Antibiotic Administration Date is equal to a Non Unable to Determine date for at least one antibiotic

dose, continue processing and proceed to the Antibiotic Days I calculation. Note: Proceed only with antibiotic doses that have an associated non Unable to Determine date.
22.Calculate Antibiotic Days I. Antibiotic Days I, in days, is equal to the Surgical Incision Date minus the Antibiotic Administration Date.
23.Check Antibiotic Days I
a.If the Antibiotic Days I is greater than 1 for at least one antibiotic dose, continue processing and recheck the ICD-9-CM Principal Procedure Code.
b.If the Antibiotic Days I is less than or equal to 1 for all antibiotic doses, continue processing. Proceed to step 26 and recheck Antibiotics Days I. Do not recheck ICD-9-CM Principal Procedure Code or Oral Antibiotics.
24.Recheck ICD-9-CM Principal Procedure Code only if the Antibiotic Days I is greater than 1 for at least one antibiotic dose
a.If the ICD-9-CM Principal Procedure Code is not on Table 5.03, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.03, continue processing and check Oral Antibiotics.
25.Check Oral Antibiotics
a.If Oral Antibiotics is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b. If Oral Antibiotics equals No, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If Oral Antibiotics equals Yes, continue processing and proceed to step 27 and check Surgical Incision Time. Do not recheck Antibiotic Days I.
26.Recheck Antibiotic Days I
a.If the Antibiotic Days I is less than zero for all antibiotic doses, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Antibiotic Days I is greater than or equal to zero for any antibiotic dose, continue processing and proceed to Surgical Incision Time.
27.Check Surgical Incision Time
a.If the Surgical Incision Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Surgical Incision Time is equal to Unable to Determine, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If the Surgical Incision Time is equal to a Non Unable to Determine Value, continue processing and check Antibiotic Administration Time.
28.Check Antibiotic Administration Time
a.If the Antibiotic Administration Time equals Unable to Determine for all antibiotic doses, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Antibiotic Administration Time equals a Non Unable to Determine time for at least one antibiotic dose, continue processing and proceed to the Antibiotic Timing I calculation. Note: Proceed only with antibiotic doses that have an associated non Unable to Determine time.
29.Calculate Antibiotic Timing I. Antibiotic Timing I, in minutes, is equal to the Surgical Incision Date and Surgical Incision Time minus the Antibiotic Administration Date and Antibiotic Administration Time.
30.Check Antibiotic Timing I
a.If the Antibiotic Timing I is greater than 1440 minutes for any antibiotic dose, continue processing and recheck the ICD-9-CM Principal Procedure Code.
b.If the Antibiotic Timing I is less than or equal to 1440 minutes for all antibiotic doses, continue processing. Proceed to step 33 and recheck Antibiotic Timing I. Do not recheck ICD-9-CM Principal Procedure Code or Oral Antibiotics.
31.Recheck ICD-9-CM Principal Procedure Code only if the Antibiotic Timing I is greater than 1440 minutes for any antibiotic dose
a.If the ICD-9-CM Principal Procedure Code is not on Table 5.03, the case will proceed to a Measure Category

Assignment of B and will not be in the Measure Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.03, continue processing and check Oral Antibiotics.
32.Check Oral Antibiotics
a.If Oral Antibiotics is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If Oral Antibiotics equals No, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop
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processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
c.If Oral Antibiotics equals Yes, continue processing and proceed to recheck Antibiotic Timing I.
33.Recheck Antibiotic Timing I
a.If the Antibiotic Timing I is greater than or equal to zero minutes and less than or equal to 60 minutes for at least one antibiotic dose, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Antibiotic Timing I is less than zero minutes or greater than 60 minutes for all antibiotic doses, continue processing and recheck Antibiotic Name.
34.Recheck Antibiotic Name
a.If the Antibiotic Name is on Table 3.8 or Table 3.10 for at least one dose, continue processing and recheck Antibiotic Timing I.
b.If the Antibiotic Name is not on Table 3.8 or Table 3.10 for any dose, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Do not recheck Antibiotic Timing I. Stop processing for CMS. Proceed to step 36 and check the Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
35.Recheck Antibiotic Timing I
a.If the Antibiotic Timing I is greater than 60 minutes and less than or equal to 120 minutes for at least one antibiotic dose on Table 3.8 or Table 3.10, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing for CMS. Proceed to Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
b.If the Antibiotic Timing I is less than zero minutes or greater than 120 minutes for all antibiotic doses on Table 3.8 or Table 3.10, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing for CMS. Proceed to Stratified Measures for Overall Rate (SCIP-Inf-1a) for The Joint Commission.
36.For The Joint Commission Only, continue processing for the Stratified Measures. Note: Initialize the Measure Category Assignment for each strata measure (b-g) to equal B, not in the Measure Population. Do not change the Measure Category Assignment that was already calculated for the overall rate (SCIP-Inf-1a). The rest of the algorithm will reset the appropriate Measure Category Assignment to be equal to the overall rate´s (SCIP-Inf-1a) Measure Category Assignment.
37.Check Overall Rate Category Assignment
a.If the Overall Rate Category Assignment is equal to B or X, set the Measure Category Assignment for the strata measures (SCIP-Inf-1b through SCIP-Inf-1h) to equal B, not in the Measure Population. Stop processing.
b.If the Overall Rate Category Assignment is equal to D or E, continue processing and check the ICD-9-CM Principal Procedure Code.
38.Check ICD-9-CM Principal Procedure Code
a.If the ICD-9-CM Principal Procedure Code is on Table 5.01, for Stratified Measure SCIP-Inf-1b, set the Measure Category Assignment for measure SCIP-Inf-1b to equal the Measure Category Assignment for measure SCIP-Inf-1a. Stop processing.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.02 or 5.03 or 5.04 or 5.05 or 5.06 or 5.07 or 5.08, continue processing and recheck the ICD-9-CM Principal Procedure Code.
39.Recheck ICD-9-CM Principal Procedure Code
a.If the ICD-9-CM Principal Procedure Code is on Table 5.02, for Stratified Measure SCIP-Inf-1c, set the Measure Category Assignment for measure SCIP-Inf-1c to equal the Measure Category Assignment for measure SCIP-Inf-1a. Stop processing.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.03 or 5.04 or 5.05 or 5.06 or 5.07 or 5.08, continue

processing and recheck the ICD-9-CM Principal Procedure Code.
40.Recheck ICD-9-CM Principal Procedure Code
a.If the ICD-9-CM Principal Procedure Code is on Table 5.04, for Stratified Measure SCIP-Inf-1d, set the Measure Category Assignment for measure SCIP-Inf-1d to equal the Measure Category Assignment for measure SCIP-Inf-1a. Stop processing.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.03 or 5.05 or 5.06 or 5.07 or 5.08, continue processing and recheck the ICD-9-CM Principal Procedure Code.
41.Recheck ICD-9-CM Principal Procedure Code
a.If the ICD-9-CM Principal Procedure Code is on Table 5.05, for Stratified Measure SCIP-Inf-1e, set the Measure Category Assignment for measure
SCIP-Inf-1e to equal the Measure Category Assignment for measure SCIP-Inf-1a. Stop processing.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.03 or 5.06 or 5.07 or 5.08, continue processing and recheck the ICD-9-CM Principal Procedure Code.
42.Recheck ICD-9-CM Principal Procedure Code
a.If the ICD-9-CM Principal Procedure Code is on Table 5.03, for Stratified Measure SCIP-Inf-1f, set the Measure Category Assignment for measure SCIP-Inf-1f to equal the Measure Category Assignment for measure SCIP-Inf-1a. Stop processing.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.06 or 5.07 or 5.08, continue processing and recheck the ICD-9-CM Principal Procedure Code.
43.Recheck ICD-9-CM Principal Procedure Code
a.If the ICD-9-CM Principal Procedure Code is on Table 5.06 or 5.07, for Stratified Measure SCIP-Inf-1g, set the Measure Category Assignment for measure SCIP-Inf-1g to equal the Measure Category Assignment for measure SCIP-Inf-1a. Stop processing.
b.If the ICD-9-CM Principal Procedure Code is on Table 5.08, for Stratified Measure SCIP-Inf-1h, set the Measure Category Assignment for measure SCIP-Inf-1h to equal the Measure Category Assignment for measure SCIP-Inf-1a. Stop processing.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)*:
Benchmarks are established using the ABC methodology, based on the actual performance of the top facilities. ABC benchmarks identify superior performance and encourage poorer performers to improve. It is data-driven, peer-group performance feedback.
Achievable Benchmarks of Care TM: developed at the University of Alabama at Birmingham for AHRQ. This methodology identifies benchmark care levels already achieved by “best-in-class” care givers. Development of benchmarks that are realistic and achievable may help to motivate providers that are having difficulty improving care. The benchmarks represent a measureable level of excellence that always exceeds average performance. It ensures that all superior providers contribute to the benchmark but also ensures that providers with high performance but very low numbers of cases do not unduly influence benchmark levels. Additional information can be found at http://main.uab.edu/show.asp?durki=14527

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)*:
The SCIP Topic Population (common to all SCIP measures) is defined as patients admitted to the hospital for inpatient acute care with an ICD-9-CM Principal Procedure Code for SCIP as defined in Appendix A, Table 5.10 and a Length of Stay (Discharge Date - Admission Date) <= 120 days. There are eight distinct strata or sub-populations within the SCIP Topic Population, each identified by a specific group of procedure codes. The patients in each stratum are counted in the Initial Patient Population of multiple measures.

The following sample size tables for each option automatically build in the number of cases needed to obtain the required sample sizes.

Quarterly Sampling
For hospitals selecting sample cases for SCIP, a modified sampling procedure is required. Hospitals selecting sample cases for this set must ensure that each individual stratum’s population and quarterly sample size meets the following conditions:
- Select within each of the seven individual measure stratum (e.g., colorectal surgery, hip arthroplasty, etc.) and the 8th SCIP stratum (Table 5.25 in Appendix A).

Quarterly Sample Size
Based on Initial Patient Population Size for the SCIP Measure Set

Hospital's Measure
Average Quarterly
Stratum Initial Patient Population Size
"N" Minimum Required
Stratum Sample Size
"n"
>/= 481 49
171-480 10% of Initial Patient Population size
17-170 17
< 17 No sampling; 100% Initial Patient Population required

Monthly Sampling
For hospitals selecting sample cases for SCIP, a modified sampling procedure is required. Hospitals selecting sample cases for this set must ensure that each individual strata population and monthly sample size meets the following conditions:
• Select within each of the seven individual measure stratum (e.g., colorectal surgery, hip arthroplasty, etc.) and the 8th SCIP stratum (Table 5.25 in Appendix A).

Monthly Sample Size
Based on Initial Patient Population Size for the SCIP Measure Set

Hospital's Measure
Average Monthly
Stratum Initial Patient Population Size
"N" Minimum Required
Stratum Sample Size
"n"
>/= 151 16
61-150 10% of Initial Patient Population size
6-60 6
<6 No sampling; 100% Initial Patient Population required

All of the SCIP measures´ specific exclusion criteria are used to filter out cases that do not belong in the measure denominator.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic Health/Medical Record

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.***):**
Most facilities use vendors to collect and submit the data electronically. CMS provides a free, downloadable tool called CART. A paper tool modeled after the data collected electronically is provided as an attachment. CART downloads can be found on QualityNet.org at http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138900279093

2a.26-28 Data source/data collection instrument reference web page URL or attachment: Attachment SCIPCARTpapertool_10.01.10-634328669255300860.doc

2a.29-31 Data dictionary/code table web page URL or attachment: URL http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228754600169

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Facility/Agency, Population: national, Program: QIO, Can be measured at all levels

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

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)	
TESTING/ANALYSIS	
2b. Reliability testing **2b.1 Data/sample** *(description of data/sample and size)*: This measure is in use for the Hospital Inpatient Quality Reporting Program. For Q2 2010, the national rate was 97.1%. The number of facilities reporting: 3,570. The number of cases in the denominator: 279,140. The number of cases in the numerator: 271,088. **2b.2 Analytic Method** *(type of reliability & rationale, method for testing)*: Measure has been in use since 2001 and has been continually collected nationally for the Hospital Inpatient Quality Reporting Program since July 2006. A predetermined number of charts are requested and submitted to an independent abstraction/validation contractor quarterly. Mismatches are calculated and reported to facilities and are used to determine eligibility for incentives. Facilities must achieve an 80% agreement with CDAC abstractors in addition to agreeing to report measure rates on Hospital Compare. **2b.3 Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*: Measure has been in use since 2001 and has been continually collected nationally for the Hospital Inpatient Quality Reporting Program since July 2006. Feedback from the hospital abstractors and the independent validation team is collected and incorporated. Reports on mismatches between national abstractors and the independent abstraction/validation contractor are reviewed quarterly. Revisions to data elements are made accordingly. A mismatch report is developed quarterly by the Iowa QIOSC.	**2b** C☐ P☐ M☐ N☐
2c. Validity testing **2c.1 Data/sample** *(description of data/sample and size)*: Review of relevant guidelines and studies is performed quarterly with a Technical Expert Panel. Antibiotic selection guidelines are reviewed during quarterly TEP teleconfereces. Specifications (including codes, new antibiotics and data elements) are modified every six months according to feedback provided by clinicians and hospital staff collecting data for the measure. National performance of the measure is monitored by the measure steward with quarterly benchmarks of hospital submitted data developed for distribution to QIOs. Trend reports are also prepared and reviewed. The measure is collecting the information it was designed to collect. **2c.2 Analytic Method** *(type of validity & rationale, method for testing)*: Face validity is systematically assessed by the Technical Expert Panels and the measure is judged to assess the provision of appropriate care for the target population. **2c.3 Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: The measure is collecting the information it was designed to collect, according to expert panel review.	**2c** C☐ P☐ M☐ N☐
2d. Exclusions Justified **2d.1 Summary of Evidence supporting exclusion(s):** The exclusions used in this measure are the exclusions used for all SCIP measures and are reviewed by the Technical Expert Panel as needed. **2d.2 Citations for Evidence:** NA **2d.3 Data/sample** *(description of data/sample and size)*: NA **2d.4 Analytic Method** *(type analysis & rationale)*: NA **2d.5 Testing Results** *(e.g., frequency, variability, sensitivity analyses)*:	**2d** C☐ P☐ M☐ N☐ NA ☐

NA	
2e. Risk Adjustment for Outcomes/ Resource Use Measures **2e.1 Data/sample** *(description of data/sample and size)*: NA **2e.2 Analytic Method** *(type of risk adjustment, analysis, & rationale)*: NA **2e.3 Testing Results** *(risk model performance metrics)*: NA **2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:** This is a process measure.	**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)*: Measure rate trends are reviewed every quarter, using a rolling 5 quarters of national hospital submitted data. **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Analysts review quarterly benchmarks and trends to identify differences in performance scores and investigate the possible causes. If measure specifications (algorithms, data elements) are causing the difference in performance, they are reviewed for possible updates by the subject matter experts. This measure has had consistent rates of performance the last several quarters. **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)*: A trends report is provided with this submission.	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: Currently, this measure is collected from the medical record. The medical record can be paper or an EHR. No analysis between chart-abstracted and eMeasure collection has been performed because the eMeasure specifications have not been implemented at this time. **2g.2 Analytic Method** *(type of analysis & rationale)*: NA **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: NA	**2g** C☐ P☐ M☐ N☐ NA ☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: An updated disparities report has been submitted to NQF for review. Data on the range of performance values by decile for the hospital process measures was provided also. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** All of the inpatient quality reporting measures collect this information: Birthdate, Hispanic Ethnicity, Payment Source, Race and Sex. Additional analysis was performed to determine disparities in US region and urban vs rural.	**2h** C☐ P☐ M☐ N☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, met?	**2** C☐

Rationale:	**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*)**:** The measure is currently in use for the Hospital Inpatient Quality Reporting Program under CMS. To receive the APU from Medicare, hospitals agree to submit their data and have their measure rates reported on Hospital Compare. http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier1&cid=1121785350606 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***):** This measure is also used in the accreditation process for the Joint Commission. It is part of the SCIP measure set, which facilities can choose to report for accreditation purposes. **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)***:** The measures rates are reported on the website Hospital Compare. 3a.5 **Methods** *(e.g., focus group, survey, QI project)***:** Data about interpretability of reported measure rates are collected by the CMS contractor responsible for maintaining Hospital Compare. Data is collected voluntarily via survey of website users. 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:** NA	**3a C☐ P☐ M☐ N☐**
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:** #528 Prophylactic Antibiotic Selection for Surgical Patients and #529 Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time	
(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?** Many of the same data elements are used, as they are collected as a set under one topic.	**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:** The antibiotic prophylaxis measures are collected as a set.	**3c C☐ P☐ M☐ N☐**

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: NA	**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*) No **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.** This measure has been retooled for EHRs but has not been tested.	**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.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.** Interpretation of data elements will always be a factor, since the instructions for obtaining the data are written by the measure developers. No unintended consequences have been identified with the antibiotic timing measure.	**4d** **C**☐ **P**☐ **M**☐ **N**☐
4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Specifications (including codes and data elements) are modified every six months according to feedback provided by clinicians and hospital staff collecting data for the measure. Data is available in the medical record and there are no feasibility or implementation issues identified. **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** The cost associated with measure use is that of data collection only. Many facilities employ quality improvement staff to perform data abstraction and entry. The same employees may develop reports and provide information to clinicians and hospital administration.	**4e** **C**☐ **P**☐ **M**☐ **N**☐

4e.3 Evidence for costs: No studies have been performed on the cost of implementation. **4e.4 Business case documentation:**	
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
Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.2 Point of Contact
Kristie, Baus, RN, MS, kristie.baus@cms.hhs.gov, 410-786-8161-

Measure Developer If different from Measure Steward
Co.3 Organization
Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.4 Point of Contact
Kristie, Baus, RN, MS, kristie.baus@cms.hhs.gov, 410-786-8161-

Co.5 Submitter If different from Measure Steward POC
Wanda, Johnson, RN, wjohnson@ofmq.com, 405-302-3278-, Oklahoma Foundation for Medical Quality

Co.6 Additional organizations that sponsored/participated in measure development
This measure is aligned with the Joint Commission.

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.
The Surgical Care Improvement Project´s Infection TEP was involved in this measure´s development and remains involved in its maintenance.

Ad.2 If adapted, provide name of original measure:
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: 10, 2010
Ad.8 What is your frequency for review/update of this measure? Every 6 months

Ad.9 When is the next scheduled review/update for this measure? 04, 2011
Ad.10 Copyright statement/disclaimers: Trend Report (BM= Benchmark, rate = national score) Q209 BM: 99.7 Rate: 95.9 Q309 BM: 99.8 Rate 96.2 Q409 BM: 99.8 Rate 96.5 Q110 BM: 99.8 Rate 96.9 Q210 BM: 99.8 Rate 97.1
Ad.11 -13 Additional Information web page URL or attachment: Attachment IP Measures Disp_2009-634369268791761995.xls
Date of Submission (*MM/DD/YY*)**:** 03/28/2011

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Race/Ethnicity (3% of cases were excluded due to missing data on race/ethnicity)

Measures and Race/ethnicity group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Caucasian	247,145	251,158	98.4	ref.	ref.
African-American	36,868	37,747	97.7	0.68 (0.63-0.73)	<0.001
Hispanic	26,561	27,316	97.2	0.57 (0.53-0.62)	<0.001
Asian/Pacific Islander	7,346	7,472	98.3	0.95 (0.79-1.13)	0.548
Native American	1,074	1,087	98.8	1.34 (0.78-2.32)	0.293
AMI2: Aspirin at discharge					
Caucasian	305,754	310,489	98.5	ref.	ref.
African-American	39,545	40,591	97.4	0.59 (0.55-0.63)	<0.001
Hispanic	27,791	28,805	96.5	0.42 (0.40-0.45)	<0.001
Asian/Pacific Islander	7,694	7,854	98.0	0.74 (0.64-0.87)	<0.001
Native American	1,908	1,935	98.6	1.09 (0.75-1.60)	0.643
AMI3: ACEI or ARB for LVSD					
Caucasian	54,767	57,482	95.3	ref.	ref.
African-American	8,642	9,024	95.8	1.12 (1.01-1.25)	0.040
Hispanic	5,591	5,896	94.8	0.91 (0.80-1.03)	0.123
Asian/Pacific Islander	1,302	1,372	94.9	0.92 (0.72-1.18)	0.514
Native American	371	393	94.4	0.84 (0.54-1.29)	0.416
AMI4: Smoking cessation counseling					
Caucasian	103,977	104,611	99.4	ref.	ref.
African-American	16,611	16,741	99.2	0.78 (0.64-0.94)	0.010
Hispanic	7,671	7,757	98.9	0.54 (0.43-0.68)	<0.001
Asian/Pacific Islander	1,720	1,747	98.5	0.39 (0.26-0.57)	<0.001
Native American	753	767	98.2	0.33 (0.19-0.56)	<0.001
AMI5: Beta-blocker at discharge					
Caucasian	298,954	304,013	98.3	ref.	ref.
African-American	39,112	40,008	97.8	0.74 (0.69-0.79)	<0.001
Hispanic	27,331	28,382	96.3	0.44 (0.41-0.47)	<0.001

Asian/Pacific Islander	7,602	7,738	98.2	0.95 (0.80-1.12)	0.526
Native American	1,841	1,882	97.8	0.76 (0.56-1.04)	0.083
AMI7a: Fibrinolytic within 30 minutes					
Caucasian	651	1,169	55.7	ref.	ref.
African-American	73	157	46.5	0.69 (0.50-0.97)	0.030
Hispanic	190	417	45.6	0.67 (0.53-0.83)	<0.001
Asian/Pacific Islander	36	61	59.0	1.15 (0.68-1.93)	0.610
Native American	1	3	33.3	0.40 (0.04-4.40)	0.452
AMI8a: PCI within 90 minutes					
Caucasian	38,044	43,171	88.1	ref.	ref.
African-American	3,448	4,234	81.4	0.59 (0.54-0.64)	<0.001
Hispanic	3,297	3,936	83.8	0.70 (0.64-0.76)	<0.001
Asian/Pacific Islander	1,079	1,237	87.2	0.92 (0.78-1.09)	0.337
Native American	160	189	84.7	0.74 (0.50-1.11)	0.143
HF1: Discharge instructions					
Caucasian	357,746	414,742	86.3	ref.	ref.
African-American	124,070	143,689	86.3	1.01 (0.99-1.03)	0.400
Hispanic	44,786	51,690	86.6	1.03 (1.01-1.06)	0.016
Asian/Pacific Islander	9,895	11,375	87.0	1.07 (1.01-1.13)	0.025
Native American	2,351	3,083	76.3	0.51 (0.47-0.56)	<0.001
HF2: Evaluation of LV function					
Caucasian	521,142	535,940	97.2	ref.	ref.
African-American	159,661	163,219	97.8	1.27 (1.23-1.32)	<0.001
Hispanic	55,388	57,714	96.0	0.68 (0.65-0.71)	<0.001
Asian/Pacific Islander	12,720	13,004	97.8	1.27 (1.13-1.43)	<0.001
Native American	3,201	3,416	93.7	0.42 (0.37-0.49)	<0.001
HF3: ACEI or ARB for LVSD					
Caucasian	145,067	155,808	93.1	ref.	ref.
African-American	66,217	69,597	95.1	1.45 (1.39-1.51)	<0.001
Hispanic	18,769	20,068	93.5	1.07 (1.01-1.14)	0.026
Asian/Pacific Islander	3,777	3,962	95.3	1.51 (1.30-1.75)	<0.001
Native American	1,173	1,278	91.8	0.83 (0.68-1.01)	0.064
HF4: Smoking cessation counseling					
Caucasian	76,177	77,858	97.8	ref.	ref.

African-American	44,071	44,760	98.5	1.41 (1.29-1.54)	<0.001
Hispanic	7,273	7,423	98.0	1.07 (0.90-1.27)	0.432
Asian/Pacific Islander	1,375	1,413	97.3	0.80 (0.58-1.11)	0.176
Native American	692	732	94.5	0.38 (0.28-0.53)	<0.001
PN2: Pnemococal vaccination given or screened for					
Caucasian	378,259	408,034	92.7	ref.	ref.
African-American	34,705	39,186	88.6	0.61 (0.59-0.63)	<0.001
Hispanic	24,135	28,528	84.6	0.43 (0.42-0.45)	<0.001
Asian/Pacific Islander	8,804	9,900	88.9	0.63 (0.59-0.67)	<0.001
Native American	2,310	2,640	87.5	0.55 (0.49-0.62)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
Caucasian	78,108	82,387	94.8	ref.	ref.
African-American	12,551	13,078	96.0	1.30 (1.19-1.43)	<0.001
Hispanic	7,338	7,863	93.3	0.77 (0.70-0.84)	<0.001
Asian/Pacific Islander	2,199	2,271	96.8	1.67 (1.32-2.12)	<0.001
Native American	776	846	91.7	0.61 (0.47-0.78)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Caucasian	361,802	380,083	95.2	ref.	ref.
African-American	56,541	60,416	93.6	0.74 (0.71-0.76)	<0.001
Hispanic	34,169	37,132	92.0	0.58 (0.56-0.61)	<0.001
Asian/Pacific Islander	9,388	9,889	94.9	0.95 (0.86-1.04)	0.240
Native American	3,058	3,402	89.9	0.45 (0.40-0.50)	<0.001
PN4: Smoking cessation counseling					
Caucasian	153,759	158,876	96.8	ref.	ref.
African-American	30,859	31,710	97.3	1.21 (1.12-1.30)	<0.001
Hispanic	9,885	10,230	96.6	0.95 (0.85-1.07)	0.400
Asian/Pacific Islander	1,689	1,759	96.0	0.80 (0.63-1.02)	0.074
Native American	1,722	1,940	88.8	0.26 (0.23-0.30)	<0.001
PN5c: First antibiotic dose within 6 hours					
Caucasian	402,180	421,893	95.3	ref.	ref.
African-American	60,989	66,036	92.4	0.59 (0.57-0.61)	<0.001
Hispanic	35,145	39,094	89.9	0.44 (0.42-0.45)	<0.001
Asian/Pacific Islander	9,399	9,865	95.3	0.99 (0.90-1.09)	0.812
Native American	3,430	3,752	91.4	0.52 (0.47-0.59)	<0.001

PN6: Antibioti selection consistent with guidelines					
Caucasian	254,116	279,291	91.0	ref.	ref.
African-American	35,023	38,201	91.7	1.09 (1.05-1.13)	<0.001
Hispanic	25,350	28,361	89.4	0.83 (0.80-0.87)	<0.001
Asian/Pacific Islander	6,093	6,689	91.1	1.01 (0.93-1.10)	0.770
Native American	2,570	2,922	88.0	0.72 (0.65-0.81)	<0.001
PN7: Influenza vaccination given or screened for					
Caucasian	266,920	293,208	91.0	ref.	ref.
African-American	31,910	37,007	86.2	0.62 (0.60-0.64)	<0.001
Hispanic	18,854	22,505	83.8	0.51 (0.49-0.53)	<0.001
Asian/Pacific Islander	5,702	6,539	87.2	0.67 (0.62-0.72)	<0.001
Native American	1,927	2,405	80.1	0.40 (0.36-0.44)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Caucasian	827,536	860,067	96.2	ref.	ref.
African-American	95,484	99,527	95.9	0.93 (0.90-0.96)	<0.001
Hispanic	60,439	64,806	93.3	0.54 (0.53-0.56)	<0.001
Asian/Pacific Islander	14,743	15,282	96.5	1.08 (0.99-1.17)	0.101
Native American	4,037	4,325	93.3	0.55 (0.49-0.62)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
Caucasian	848,411	868,974	97.6	ref.	ref.
African-American	97,576	100,464	97.1	0.82 (0.79-0.85)	<0.001
Hispanic	62,778	64,991	96.6	0.69 (0.66-0.72)	<0.001
Asian/Pacific Islander	15,171	15,547	97.6	0.98 (0.88-1.08)	0.672
Native American	4,230	4,360	97.0	0.79 (0.66-0.94)	0.008
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Caucasian	766,551	819,715	93.5	ref.	ref.
African-American	87,315	94,468	92.4	0.85 (0.83-0.87)	<0.001
Hispanic	54,461	61,420	88.7	0.54 (0.53-0.56)	<0.001
Asian/Pacific Islander	13,218	14,358	92.1	0.80 (0.76-0.85)	<0.001
Native American	3,812	4,103	92.9	0.91 (0.81-1.02)	0.116
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Caucasian	134,822	144,908	93.0	ref.	ref.
African-American	10,742	11,722	91.6	0.82 (0.77-0.88)	<0.001
Hispanic	11,031	12,520	88.1	0.55 (0.52-0.59)	<0.001

Asian/Pacific Islander	3,437	3,773	91.1	0.77 (0.68-0.86)	<0.001
Native American	706	766	92.2	0.88 (0.68-1.15)	0.344
SCIP6: appropriate hair removal					
Caucasian	1,222,603	1,232,305	99.2	ref.	ref.
African-American	149,984	151,395	99.1	0.84 (0.80-0.89)	<0.001
Hispanic	95,326	97,273	98.0	0.39 (0.37-0.41)	<0.001
Asian/Pacific Islander	23,368	23,575	99.1	0.90 (0.78-1.03)	0.119
Native American	6,390	6,543	97.7	0.33 (0.28-0.39)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Caucasian	327,860	359,462	91.2	ref.	ref.
African-American	34,505	38,004	90.8	0.95 (0.92-0.99)	0.007
Hispanic	17,805	20,128	88.5	0.74 (0.71-0.77)	<0.001
Asian/Pacific Islander	5,128	5,770	88.9	0.77 (0.71-0.84)	<0.001
Native American	1,312	1,493	87.9	0.70 (0.60-0.82)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Caucasian	343,547	367,129	93.6	ref.	ref.
African-American	49,075	52,658	93.2	0.94 (0.91-0.98)	<0.001
Hispanic	27,199	30,224	90.0	0.62 (0.59-0.64)	<0.001
Asian/Pacific Islander	7,406	8,195	90.4	0.64 (0.60-0.69)	<0.001
Native American	1,999	2,208	90.5	0.66 (0.57-0.76)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Caucasian	334,443	365,471	91.5	ref.	ref.
African-American	47,804	52,220	91.5	1.00 (0.97-1.04)	0.798
Hispanic	26,376	29,811	88.5	0.71 (0.69-0.74)	<0.001
Asian/Pacific Islander	7,241	8,126	89.1	0.76 (0.71-0.81)	<0.001
Native American	1,942	2,183	89.0	0.75 (0.65-0.86)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Gender (less than 0.1% of cases were excluded due to missing data on gender)

Measures and gender	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Female	132,222	135,450	97.6	ref.	ref.
Male	197,136	199,829	98.7	1.79 (1.70-1.88)	<0.001
AMI2: Aspirin at discharge					
Female	150,930	154,577	97.6	ref.	ref.
Male	247,653	251,152	98.6	1.71 (1.63-1.79)	<0.001
AMI3: ACEI or ARB for LVSD					
Female	26,127	27,376	95.4	ref.	ref.
Male	47,156	49,502	95.3	0.96 (0.90-1.03)	0.269
AMI4: Smoking cessation counseling					
Female	42,885	43,241	99.2	ref.	ref.
Male	93,180	93,741	99.4	1.38 (1.21-1.58)	<0.001
AMI5: Beta-blocker at discharge					
Female	149,171	152,804	97.6	ref.	ref.
Male	240,965	244,715	98.5	1.56 (1.49-1.64)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
Female	254	523	48.6	ref.	ref.
Male	730	1,347	54.2	1.25 (1.02-1.53)	0.029
AMI8a: PCI within 90 minutes					
Female	12,629	15,029	84.0	ref.	ref.
Male	35,545	40,118	88.6	1.48 (1.40-1.56)	<0.001
HF1: Discharge instructions					
Female	264,674	308,679	85.7	ref.	ref.
Male	286,692	330,544	86.7	1.09 (1.07-1.10)	<0.001
HF2: Evaluation of LV function					
Female	391,232	403,675	96.9	ref.	ref.
Male	378,142	387,472	97.6	1.29 (1.25-1.32)	<0.001
HF3: ACEI or ARB for LVSD					
Female	92,111	98,257	93.7	ref.	ref.
Male	148,513	158,409	93.8	1.00 (0.97-1.03)	0.936
HF4: Smoking cessation counseling					

Female	51,445	52,630	97.7	ref.	ref.
Male	80,801	82,294	98.2	1.25 (1.15-1.35)	<0.001
PN2: Pnemococal vaccination given or screened for					
Female	247,221	269,382	91.8	ref.	ref.
Male	212,145	231,563	91.6	0.98 (0.96-1.00)	0.042
PN3a: Initial blood culture within 24 hours - ICU only					
Female	50,079	52,932	94.6	ref.	ref.
Male	53,544	56,305	95.1	1.10 (1.05-1.17)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Female	246,104	260,181	94.6	ref.	ref.
Male	230,916	243,503	94.8	1.05 (1.02-1.08)	<0.001
PN4: Smoking cessation counseling					
Female	103,237	106,615	96.8	ref.	ref.
Male	99,296	102,754	96.6	0.94 (0.90-0.99)	0.011
PN5c: First antibiotic dose within 6 hours					
Female	272,016	288,698	94.2	ref.	ref.
Male	252,643	266,222	94.9	1.14 (1.11-1.17)	<0.001
PN6: Antibioti selection consistent with guidelines					
Female	175,954	193,373	91.0	ref.	ref.
Male	156,410	172,235	90.8	0.98 (0.96-1.00)	0.059
PN7: Influenza vaccination given or screened for					
Female	180,348	200,180	90.1	ref.	ref.
Male	153,242	170,972	89.6	0.95 (0.93-0.97)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Female	660,133	687,675	96.0	ref.	ref.
Male	383,816	399,901	96.0	1.00 (0.98-1.02)	0.660
SCIP2: Prophylactic antibiotic consistent with guidelines					
Female	672,428	691,674	97.2	ref.	ref.
Male	398,658	406,588	98.0	1.44 (1.40-1.48)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Female	613,378	657,129	93.3	ref.	ref.
Male	351,165	378,744	92.7	0.91 (0.89-0.92)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Female	52,328	56,457	92.7	ref.	ref.
Male	114,589	124,004	92.4	0.96 (0.92-1.00)	0.038

SCIP6: appropriate hair removal					
Female	944,375	951,265	99.3	ref.	ref.
Male	613,124	620,263	98.8	0.63 (0.61-0.65)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Female	210,810	232,468	90.7	ref.	ref.
Male	189,354	207,438	91.3	1.08 (1.05-1.10)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Female	266,908	284,212	93.9	ref.	ref.
Male	177,139	192,153	92.2	0.76 (0.75-0.78)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Female	260,379	282,821	92.1	ref.	ref.
Male	171,935	190,847	90.1	0.78 (0.77-0.80)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Age-Group

Measures and age group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
under 65 years	141,150	142,677	98.9	ref.	ref.
65 to 74 years	69,462	70,636	98.3	0.64 (0.59-0.69)	<0.001
75 to 84 years	68,661	70,270	97.7	0.46 (0.43-0.50)	<0.001
85 or older	50,094	51,705	96.9	0.34 (0.31-0.36)	<0.001
AMI2: Aspirin at discharge					
under 65 years	188,910	191,432	98.7	ref.	ref.
65 to 74 years	86,865	88,378	98.3	0.77 (0.72-0.82)	<0.001
75 to 84 years	76,528	78,185	97.9	0.62 (0.58-0.66)	<0.001
85 or older	46,290	47,744	97.0	0.42 (0.40-0.45)	<0.001
AMI3: ACEI or ARB for LVSD					
under 65 years	30,729	31,955	96.2	ref.	ref.
65 to 74 years	16,782	17,608	95.3	0.81 (0.74-0.89)	<0.001
75 to 84 years	16,144	17,053	94.7	0.71 (0.65-0.77)	<0.001
85 or older	9,631	10,265	93.8	0.61 (0.55-0.67)	<0.001
AMI4: Smoking cessation counseling					
under 65 years	101,819	102,305	99.5	ref.	ref.
65 to 74 years	23,569	23,794	99.1	0.50 (0.43-0.59)	<0.001
75 to 84 years	8,919	9,074	98.3	0.27 (0.23-0.33)	<0.001
85 or older	1,762	1,813	97.2	0.16 (0.12-0.22)	<0.001
AMI5: Beta-blocker at discharge					
under 65 years	181,451	184,294	98.5	ref.	ref.
65 to 74 years	85,291	86,894	98.2	0.83 (0.78-0.89)	<0.001
75 to 84 years	76,749	78,361	97.9	0.75 (0.70-0.79)	<0.001
85 or older	46,654	47,979	97.2	0.55 (0.52-0.59)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
under 65 years	648	1,212	53.5	ref.	ref.
65 to 74 years	194	358	54.2	1.03 (0.81-1.30)	0.810
75 to 84 years	93	202	46.0	0.74 (0.55-1.00)	0.051
85 or older	49	98	50.0	0.87 (0.58-1.31)	0.508
AMI8a: PCI within 90 minutes					
under 65 years	31,621	35,686	88.6	ref.	ref.
65 to 74 years	9,116	10,546	86.4	0.82 (0.77-0.87)	<0.001
75 to 84 years	5,398	6,466	83.5	0.65 (0.60-0.70)	<0.001
85 or older	2,040	2,451	83.2	0.64 (0.57-0.71)	<0.001
HF1: Discharge instructions					
under 65 years	178,658	207,594	86.1	ref.	ref.
65 to 74 years	123,528	143,712	86.0	0.99 (0.97-1.01)	0.373
75 to 84 years	151,451	175,244	86.4	1.03 (1.01-1.05)	0.001
85 or older	97,755	112,707	86.7	1.06 (1.04-1.08)	<0.001
HF2: Evaluation of LV function					

under 65 years	216,443	221,533	97.7	ref.	ref.
65 to 74 years	162,507	166,888	97.4	0.87 (0.84-0.91)	<0.001
75 to 84 years	220,926	227,028	97.3	0.85 (0.82-0.88)	<0.001
85 or older	169,548	175,750	96.5	0.64 (0.62-0.67)	<0.001
HF3: ACEI or ARB for LVSD					
under 65 years	95,238	99,651	95.6	ref.	ref.
65 to 74 years	52,803	56,622	93.3	0.64 (0.61-0.67)	<0.001
75 to 84 years	58,917	63,666	92.5	0.57 (0.55-0.60)	<0.001
85 or older	33,681	36,742	91.7	0.51 (0.49-0.53)	<0.001
HF4: Smoking cessation counseling					
under 65 years	78,879	80,061	98.5	ref.	ref.
65 to 74 years	31,278	32,007	97.7	0.64 (0.59-0.71)	<0.001
75 to 84 years	17,689	18,260	96.9	0.46 (0.42-0.51)	<0.001
85 or older	4,402	4,599	95.7	0.33 (0.29-0.39)	<0.001
PN2: Pnemococal vaccination given or screened for					
under 65 years	--	--	--	--	--
65 to 74 years	154,049	168,347	91.5	ref.	ref.
75 to 84 years	180,579	195,787	92.2	1.10 (1.08-1.13)	<0.001
85 or older	124,772	136,849	91.2	0.96 (0.93-0.98)	0.001
PN3a: Initial blood culture within 24 hours - ICU only					
under 65 years	43,154	45,370	95.1	ref.	ref.
65 to 74 years	23,165	24,488	94.6	0.90 (0.84-0.96)	0.003
75 to 84 years	23,777	25,070	94.8	0.94 (0.88-1.01)	0.111
85 or older	13,530	14,312	94.5	0.89 (0.82-0.97)	0.006
PN3b: Initial blood culture before first antibiotic dose - ED only					
under 65 years	180,506	192,602	93.7	ref.	ref.
65 to 74 years	92,223	97,052	95.0	1.28 (1.24-1.32)	<0.001
75 to 84 years	116,268	121,901	95.4	1.38 (1.34-1.43)	<0.001
85 or older	88,051	92,159	95.5	1.44 (1.39-1.49)	<0.001
PN4: Smoking cessation counseling					
under 65 years	138,481	142,258	97.3	ref.	ref.
65 to 74 years	39,066	40,713	96.0	0.65 (0.61-0.69)	<0.001
75 to 84 years	20,330	21,389	95.0	0.52 (0.49-0.56)	<0.001
85 or older	4,673	5,027	93.0	0.36 (0.32-0.40)	<0.001
PN5c: First antibiotic dose within 6 hours					
under 65 years	196,974	210,170	93.7	ref.	ref.
65 to 74 years	103,529	109,243	94.8	1.21 (1.18-1.25)	<0.001
75 to 84 years	128,404	134,912	95.2	1.32 (1.28-1.36)	<0.001
85 or older	95,798	100,641	95.2	1.33 (1.28-1.37)	<0.001
PN6: Antibioti selection consistent with guidelines					
under 65 years	145,078	158,844	91.3	ref.	ref.
65 to 74 years	60,719	67,599	89.8	0.84 (0.81-0.86)	<0.001
75 to 84 years	74,042	81,558	90.8	0.93 (0.91-0.96)	<0.001
85 or older	52,553	57,638	91.2	0.98 (0.95-1.01)	0.255
PN7: Influenza vaccination given or screened for					
under 65 years	92,150	105,920	87.0	ref.	ref.
65 to 74 years	80,824	89,267	90.5	1.43 (1.39-1.47)	<0.001

75 to 84 years	94,637	103,395	91.5	1.61 (1.57-1.66)	<0.001
85 or older	65,988	72,586	90.9	1.49 (1.45-1.54)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
under 65 years	543,747	565,392	96.2	ref.	ref.
65 to 74 years	264,596	275,189	96.2	0.99 (0.97-1.02)	0.637
75 to 84 years	185,731	194,018	95.7	0.89 (0.87-0.92)	<0.001
85 or older	49,930	53,035	94.1	0.64 (0.62-0.67)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
under 65 years	554,132	569,841	97.2	ref.	ref.
65 to 74 years	272,719	278,267	98.0	1.39 (1.35-1.44)	<0.001
75 to 84 years	192,365	196,738	97.8	1.25 (1.21-1.29)	<0.001
85 or older	51,927	53,474	97.1	0.95 (0.90-1.00)	0.066
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
under 65 years	509,115	543,621	93.7	ref.	ref.
65 to 74 years	243,668	262,144	93.0	0.89 (0.88-0.91)	<0.001
75 to 84 years	168,265	182,048	92.4	0.83 (0.81-0.84)	<0.001
85 or older	43,548	48,116	90.5	0.65 (0.63-0.67)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
under 65 years	72,979	79,327	92.0	ref.	ref.
65 to 74 years	52,359	56,792	92.2	1.03 (0.99-1.07)	0.185
75 to 84 years	36,879	39,404	93.6	1.27 (1.21-1.33)	<0.001
85 or older	4,704	4,942	95.2	1.72 (1.51-1.96)	<0.001
SCIP6: appropriate hair removal					
under 65 years	810,303	818,220	99.0	ref.	ref.
65 to 74 years	380,445	383,750	99.1	1.12 (1.08-1.17)	<0.001
75 to 84 years	279,516	281,752	99.2	1.22 (1.17-1.28)	<0.001
85 or older	87,319	87,891	99.3	1.49 (1.37-1.62)	<0.001
SCIPCARD2: Perioperative period beta blocker					
under 65 years	143,202	157,742	90.8	ref.	ref.
65 to 74 years	125,183	136,865	91.5	1.09 (1.06-1.12)	<0.001
75 to 84 years	101,842	111,827	91.1	1.04 (1.01-1.06)	0.010
85 or older	29,959	33,499	89.4	0.86 (0.83-0.89)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
under 65 years	204,866	222,992	91.9	ref.	ref.
65 to 74 years	111,168	117,886	94.3	1.46 (1.42-1.51)	<0.001
75 to 84 years	92,459	97,769	94.6	1.54 (1.49-1.59)	<0.001
85 or older	35,581	37,747	94.3	1.45 (1.39-1.52)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
under 65 years	199,284	221,436	90.0	ref.	ref.
65 to 74 years	108,467	117,367	92.4	1.35 (1.32-1.39)	<0.001
75 to 84 years	90,083	97,336	92.5	1.38 (1.34-1.42)	<0.001
85 or older	34,507	37,557	91.9	1.26 (1.21-1.31)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Census Region

Measures and census region	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
South	126,608	129,145	98.0	ref.	ref.
Midwest	75,072	76,242	98.5	1.29 (1.20-1.38)	<0.001
Northeast	62,335	63,302	98.5	1.29 (1.20-1.39)	<0.001
West	61,600	62,432	98.7	1.48 (1.37-1.61)	<0.001
US Territories	3,752	4,167	90.0	0.18 (0.16-0.20)	<0.001
AMI2: Aspirin at discharge					
South	154,361	157,475	98.0	ref.	ref.
Midwest	96,702	98,082	98.6	1.41 (1.33-1.51)	<0.001
Northeast	72,945	73,951	98.6	1.46 (1.36-1.57)	<0.001
West	71,443	72,548	98.5	1.30 (1.22-1.40)	<0.001
US Territories	3,142	3,683	85.3	0.12 (0.11-0.13)	<0.001
AMI3: ACEI or ARB for LVSD					
South	30,162	31,629	95.4	ref.	ref.
Midwest	17,573	18,369	95.7	1.07 (0.98-1.17)	0.114
Northeast	13,443	14,124	95.2	0.96 (0.87-1.05)	0.392
West	11,325	11,875	95.4	1.00 (0.91-1.11)	0.977
US Territories	783	884	88.6	0.38 (0.30-0.47)	<0.001
AMI4: Smoking cessation counseling					
South	59,052	59,326	99.5	ref.	ref.
Midwest	34,282	34,529	99.3	0.64 (0.54-0.77)	<0.001
Northeast	21,314	21,497	99.1	0.54 (0.45-0.65)	<0.001
West	20,782	20,940	99.2	0.61 (0.50-0.74)	<0.001
US Territories	639	694	92.1	0.05 (0.04-0.07)	<0.001
AMI5: Beta-blocker at discharge					
South	150,602	153,698	98.0	ref.	ref.
Midwest	94,600	96,058	98.5	1.33 (1.25-1.42)	<0.001
Northeast	72,919	73,919	98.6	1.50 (1.40-1.61)	<0.001
West	68,776	70,048	98.2	1.11 (1.04-1.19)	0.002
US Territories	3,248	3,805	85.4	0.12 (0.11-0.13)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
South	386	691	55.9	ref.	ref.
Midwest	71	157	45.2	0.65 (0.46-0.92)	0.016
Northeast	114	221	51.6	0.84 (0.62-1.14)	0.266
West	325	577	56.3	1.02 (0.82-1.27)	0.868
US Territories	88	224	39.3	0.51 (0.38-0.70)	<0.001
AMI8a: PCI within 90 minutes					
South	18,249	21,033	86.8	ref.	ref.
Midwest	12,047	13,530	89.0	1.24 (1.16-1.33)	<0.001
Northeast	7,776	8,945	86.9	1.01 (0.94-1.09)	0.695
West	10,077	11,545	87.3	1.05 (0.98-1.12)	0.182

US Territories	26	96	27.1	0.06 (0.04-0.09)	<0.001
HF1: Discharge instructions					
South	230,620	268,753	85.8	ref.	ref.
Midwest	123,214	142,800	86.3	1.04 (1.02-1.06)	<0.001
Northeast	104,441	118,681	88.0	1.21 (1.19-1.24)	<0.001
West	87,789	101,987	86.1	1.02 (1.00-1.04)	0.037
US Territories	5,328	7,036	75.7	0.52 (0.49-0.55)	<0.001
HF2: Evaluation of LV function					
South	313,881	323,530	97.0	ref.	ref.
Midwest	177,519	182,711	97.2	1.05 (1.02-1.09)	0.004
Northeast	154,546	157,057	98.4	1.89 (1.81-1.98)	<0.001
West	117,503	120,882	97.2	1.07 (1.03-1.11)	0.001
US Territories	5,975	7,019	85.1	0.18 (0.16-0.19)	<0.001
HF3: ACEI or ARB for LVSD					
South	102,341	109,272	93.7	ref.	ref.
Midwest	54,335	57,985	93.7	1.01 (0.97-1.05)	0.700
Northeast	44,314	47,239	93.8	1.03 (0.98-1.07)	0.259
West	37,449	39,660	94.4	1.15 (1.09-1.21)	<0.001
US Territories	2,200	2,525	87.1	0.46 (0.41-0.52)	<0.001
HF4: Smoking cessation counseling					
South	60,779	61,825	98.3	ref.	ref.
Midwest	30,645	31,366	97.7	0.73 (0.66-0.81)	<0.001
Northeast	20,880	21,315	98.0	0.83 (0.74-0.92)	<0.001
West	19,359	19,792	97.8	0.77 (0.69-0.86)	<0.001
US Territories	585	629	93.0	0.23 (0.17-0.31)	<0.001
PN2: Pnemococal vaccination given or screened for					
South	179,960	194,612	92.5	ref.	ref.
Midwest	114,202	124,453	91.8	0.91 (0.88-0.93)	<0.001
Northeast	88,746	95,893	92.5	1.01 (0.98-1.04)	0.466
West	75,360	83,017	90.8	0.80 (0.78-0.82)	<0.001
US Territories	1,132	3,008	37.6	0.05 (0.05-0.05)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
South	41,731	43,940	95.0	ref.	ref.
Midwest	24,196	25,563	94.7	0.94 (0.87-1.00)	0.065
Northeast	16,787	17,632	95.2	1.05 (0.97-1.14)	0.225
West	20,703	21,725	95.3	1.07 (0.99-1.16)	0.072
US Territories	209	380	55.0	0.06 (0.05-0.08)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
South	187,438	197,520	94.9	ref.	ref.
Midwest	110,172	115,477	95.4	1.12 (1.08-1.16)	<0.001
Northeast	93,600	98,873	94.7	0.95 (0.92-0.99)	0.008
West	83,935	89,171	94.1	0.86 (0.83-0.89)	<0.001
US Territories	1,903	2,673	71.2	0.13 (0.12-0.14)	<0.001
PN4: Smoking cessation counseling					
South	91,072	93,604	97.3	ref.	ref.
Midwest	48,987	51,087	95.9	0.65 (0.61-0.69)	<0.001
Northeast	32,410	33,325	97.3	0.98 (0.91-1.06)	0.695

West	29,466	30,694	96.0	0.67 (0.62-0.72)	<0.001
US Territories	615	677	90.8	0.28 (0.21-0.36)	<0.001
PN5c: First antibiotic dose within 6 hours					
South	208,883	220,861	94.6	ref.	ref.
Midwest	128,036	134,173	95.4	1.20 (1.16-1.23)	<0.001
Northeast	96,895	102,680	94.4	0.96 (0.93-0.99)	0.014
West	88,422	93,297	94.8	1.04 (1.01-1.08)	0.024
US Territories	2,469	3,955	62.4	0.10 (0.09-0.10)	<0.001
PN6: Antibioti selection consistent with guidelines					
South	134,164	147,904	90.7	ref.	ref.
Midwest	78,294	86,405	90.6	0.99 (0.96-1.02)	0.434
Northeast	59,152	63,980	92.5	1.25 (1.21-1.30)	<0.001
West	58,295	63,887	91.2	1.07 (1.03-1.10)	<0.001
US Territories	2,487	3,463	71.8	0.26 (0.24-0.28)	<0.001
PN7: Influenza vaccination given or screened for					
South	136,798	151,103	90.5	ref.	ref.
Midwest	82,023	90,887	90.2	0.97 (0.94-0.99)	0.021
Northeast	60,341	66,389	90.9	1.04 (1.01-1.08)	0.008
West	53,674	60,817	88.3	0.79 (0.76-0.81)	<0.001
US Territories	763	1,972	38.7	0.07 (0.06-0.07)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
South	394,545	409,842	96.3	ref.	ref.
Midwest	266,459	276,954	96.2	0.98 (0.96-1.01)	0.223
Northeast	193,461	200,392	96.5	1.08 (1.05-1.11)	<0.001
West	183,368	192,227	95.4	0.80 (0.78-0.82)	<0.001
US Territories	6,171	8,219	75.1	0.12 (0.11-0.12)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
South	403,132	414,194	97.3	ref.	ref.
Midwest	273,589	279,578	97.9	1.25 (1.21-1.29)	<0.001
Northeast	197,917	202,575	97.7	1.17 (1.13-1.21)	<0.001
West	189,102	194,077	97.4	1.04 (1.01-1.08)	0.015
US Territories	7,403	7,896	93.8	0.41 (0.38-0.45)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
South	361,060	388,513	92.9	ref.	ref.
Midwest	248,442	264,681	93.9	1.16 (1.14-1.19)	<0.001
Northeast	180,683	191,769	94.2	1.24 (1.21-1.27)	<0.001
West	169,118	183,133	92.3	0.92 (0.90-0.94)	<0.001
US Territories	5,293	7,833	67.6	0.16 (0.15-0.17)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
South	66,018	71,829	91.9	ref.	ref.
Midwest	40,808	44,136	92.5	1.08 (1.03-1.13)	<0.001
Northeast	29,288	30,993	94.5	1.51 (1.43-1.60)	<0.001
West	29,005	31,251	92.8	1.14 (1.08-1.20)	<0.001
US Territories	1,802	2,256	79.9	0.35 (0.31-0.39)	<0.001
SCIP6: appropriate hair removal					
South	587,629	592,145	99.2	ref.	ref.
Midwest	385,646	388,859	99.2	0.92 (0.88-0.97)	<0.001

Northeast	297,284	299,532	99.2	1.02 (0.97-1.07)	0.532
West	279,180	282,116	99.0	0.73 (0.70-0.77)	<0.001
US Territories	7,844	8,961	87.5	0.05 (0.05-0.06)	<0.001
SCIPCARD2: Perioperative period beta blocker					
South	147,784	162,051	91.2	ref.	ref.
Midwest	106,546	117,054	91.0	0.98 (0.95-1.01)	0.113
Northeast	85,381	92,184	92.6	1.21 (1.18-1.25)	<0.001
West	59,482	67,099	88.6	0.75 (0.73-0.78)	<0.001
US Territories	993	1,545	64.3	0.17 (0.16-0.19)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
South	169,988	182,774	93.0	ref.	ref.
Midwest	99,327	106,377	93.4	1.06 (1.03-1.09)	<0.001
Northeast	96,401	100,803	95.6	1.65 (1.59-1.71)	<0.001
West	76,837	84,597	90.8	0.74 (0.72-0.77)	<0.001
US Territories	1,521	1,843	82.5	0.36 (0.31-0.40)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
South	164,922	181,622	90.8	ref.	ref.
Midwest	96,639	105,893	91.3	1.06 (1.03-1.09)	<0.001
Northeast	94,639	100,532	94.1	1.63 (1.58-1.68)	<0.001
West	74,698	83,964	89.0	0.82 (0.79-0.84)	<0.001
US Territories	1,443	1,685	85.6	0.60 (0.53-0.69)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Hospital Rural/Urban Location (less than 0.1 of cases were excluded due to missing data on hospital rural/urban location)

Measures and hospital rural/urban location	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Urban	291,143	295,802	98.4	ref.	ref.
Rural	38,206	39,467	96.8	0.48 (0.46-0.52)	<0.001
AMI2: Aspirin at discharge					
Urban	358,943	364,751	98.4	ref.	ref.
Rural	39,639	40,973	96.7	0.48 (0.45-0.51)	<0.001
AMI3: ACEI or ARB for LVSD					
Urban	65,715	68,816	95.5	ref.	ref.
Rural	7,570	8,064	93.9	0.72 (0.66-0.80)	<0.001
AMI4: Smoking cessation counseling					
Urban	122,296	123,021	99.4	ref.	ref.
Rural	13,772	13,964	98.6	0.43 (0.36-0.50)	<0.001
AMI5: Beta-blocker at discharge					
Urban	350,908	356,917	98.3	ref.	ref.
Rural	39,223	40,596	96.6	0.49 (0.46-0.52)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
Urban	743	1,378	53.9	ref.	ref.
Rural	241	491	49.1	0.82 (0.67-1.01)	0.066
AMI8a: PCI within 90 minutes					
Urban	44,330	50,581	87.6	ref.	ref.
Rural	3,845	4,568	84.2	0.75 (0.69-0.82)	<0.001
HF1: Discharge instructions					
Urban	462,198	530,366	87.1	ref.	ref.
Rural	89,161	108,850	81.9	0.67 (0.66-0.68)	<0.001
HF2: Evaluation of LV function					
Urban	640,201	651,626	98.2	ref.	ref.
Rural	129,180	139,524	92.6	0.22 (0.22-0.23)	<0.001
HF3: ACEI or ARB for LVSD					
Urban	204,835	216,883	94.4	ref.	ref.
Rural	35,794	39,788	90.0	0.53 (0.51-0.55)	<0.001

HF4: Smoking cessation counseling					
Urban	109,946	111,420	98.7	ref.	ref.
Rural	22,294	23,495	94.9	0.25 (0.23-0.27)	<0.001
PN2: Pnemococal vaccination given or screened for					
Urban	343,445	372,029	92.3	ref.	ref.
Rural	115,907	128,899	89.9	0.74 (0.73-0.76)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
Urban	82,609	86,195	95.8	ref.	ref.
Rural	21,017	23,045	91.2	0.45 (0.43-0.48)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Urban	370,713	390,752	94.9	ref.	ref.
Rural	106,285	112,910	94.1	0.87 (0.84-0.89)	<0.001
PN4: Smoking cessation counseling					
Urban	153,343	157,007	97.7	ref.	ref.
Rural	49,195	52,364	93.9	0.37 (0.35-0.39)	<0.001
PN5c: First antibiotic dose within 6 hours					
Urban	391,112	414,535	94.3	ref.	ref.
Rural	133,539	140,375	95.1	1.17 (1.14-1.20)	<0.001
PN6: Antibioti selection consistent with guidelines					
Urban	244,813	267,228	91.6	ref.	ref.
Rural	87,548	98,376	89.0	0.74 (0.72-0.76)	<0.001
PN7: Influenza vaccination given or screened for					
Urban	250,927	277,437	90.4	ref.	ref.
Rural	82,639	93,694	88.2	0.79 (0.77-0.81)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Urban	873,006	907,766	96.2	ref.	ref.
Rural	170,887	179,749	95.1	0.77 (0.75-0.79)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
Urban	895,997	917,696	97.6	ref.	ref.
Rural	175,035	180,505	97.0	0.77 (0.75-0.80)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Urban	805,137	863,438	93.2	ref.	ref.
Rural	159,351	172,373	92.4	0.89 (0.87-0.90)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Urban	155,675	168,209	92.5	ref.	ref.
Rural	11,246	12,256	91.8	0.90 (0.84-0.96)	0.001

SCIP6: appropriate hair removal					
Urban	1,304,767	1,316,311	99.1	ref.	ref.
Rural	252,581	255,064	99.0	0.90 (0.86-0.94)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Urban	341,816	374,870	91.2	ref.	ref.
Rural	58,327	65,020	89.7	0.84 (0.82-0.87)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Urban	368,551	393,488	93.7	ref.	ref.
Rural	75,501	82,880	91.1	0.69 (0.67-0.71)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Urban	358,864	391,436	91.7	ref.	ref.
Rural	73,455	82,235	89.3	0.76 (0.74-0.78)	<0.001

SURGICAL IMPROVEMENT PROJECT (SCIP) CART PAPER TOOL

Provider Name: _____

CMS Certification Number (CCN): _____

National Provider Identifier (NPI): _____

Health Care Organization Identifier (HCOID): (Joint Commission Required) _____

First Name: _____

Last Name: _____

Sex: ☐ Female ☐ Male ☐ Unknown

Birthdate: _____
Dates are MM-DD-YYYY. UTD is not an allowable entry.

Race: (Select one option)
- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ UTD

Hispanic Ethnicity:
- ☐ No
- ☐ Yes

Hospital Patient ID: _____
Up to 40 letters, numbers, and/or characters.

Admission Date: _____
Dates are MM-DD-YYYY. UTD is not an allowable entry.

Discharge Date: _____
Dates are MM-DD-YYYY. UTD is not an allowable entry.

Abstractor ID: _____

Abstraction Date: _____
Dates are MM-DD-YYYY. UTD is not an allowable entry.

Vendor Tracking ID:
(Joint Commission Required) _____

1. **Would you like the questions to be enabled or disabled appropriately per the measure algorithms, or do you want all questions enabled? (SKIPPATTERN**) (Data Entry Question Only)
2. **What was the ICD-9-CM code selected as the principal diagnosis for this record? (PRINDX)** (Format three digits period two digits):

   _____

3. **Were there ICD-9-CM Other Diagnosis Codes?(OTHRDX#A)**
   (Format three digits period two digits):

   _____ _____ _____

   _____ _____ _____

   _____ _____ _____

   _____ _____ _____

4. **Was there an ICD-9-CM code selected as the principal procedure for this record?**

ICD-9-CM Principal Procedure Code (PRINPXA) (Format three digits period two digits):	**Date Performed (PRINPXDATE)** Dates are (MM-DD-YYYY or UTD)
_____	_____

5. **Were there ICD-9-CM other Procedure Codes?**

ICD-9-CM Other Procedure Code(s) (OTHERPX#A) (Format three digits period two digits):	**Date Performed (OTHERPX#DT)** (Dates are MM-DD-YYYY or UTD)

6. **What is the patient's source of payment for this Episode of Care? (PMTSRCE)**

☐ Source of payment is Medicare
☐ Source of payment is Non-Medicare

7. **What is the patient's Medicare/HIC number? (PTHIC)** (Required for data transmission of all cases that have a standard HIC#, All alpha characters must be upper case)

_____

8. **What is the postal code of the patient's residence? (POSTALCODE)**
(Five or nine digits, HOMELESS or NON-US)

_____

9. **Does this case represent part of a sample? (SAMPLE)**

☐ Yes
☐ No

10. What was the patient's discharge disposition? (DISCHGSTAT)

- ☐ 01 Discharged to home care or self care (routine discharge)
- ☐ 02 Discharged/transferred to a short term general hospital for inpatient care
- ☐ 03 Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care
- ☐ 04 Discharged/transferred to a facility that provides custodial or supportive care
- ☐ 05 Discharged/transferred to a designated cancer center or children's hospital
- ☐ 06 Discharged/transferred to home under care of organized home health service organization in anticipation of covered skilled care
- ☐ 07 Left against medical advice or discontinued care
- ☐ 20 Expired
- ☐ 21 Discharged/transferred to court/law enforcement
- ☐ 43 Discharged/transferred to a federal health care facility
- ☐ 50 Hospice - home
- ☐ 51 Hospice - medical facility (certified) providing hospice level of care
- ☐ 61 Discharged/transferred to hospital-based Medicare approved swing bed
- ☐ 62 Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital
- ☐ 63 Discharged/transferred to a Medicare certified long term care hospital (LTCH)
- ☐ 64 Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare
- ☐ 65 Discharged/transferred to a psychiatric distinct part unit of a hospital
- ☐ 66 Discharged/transferred to a Critical Access Hospital (CAH)
- ☐ 70 Discharged/transferred to another type of health care institution not defined elsewhere in this code list (See Code 05)

11. Was the procedure performed entirely by laparoscope or other fiber optic scope? (LAPAROSCOPE)

- ☐ Yes
- ☐ No
- ☐ UTD

12. During this hospital stay, was the patient enrolled in a clinical trial in which patients with the same condition as the measure set were being studied (CLNCLTRIAL)

- ☐ Yes
- ☐ No

13. Is there documentation that the patient was on continuous warfarin prior to admission? (PREADWARFARIN)

- ☐ Yes
- ☐ No

14. On what date did the anesthesia for the procedure start? (ANESTSTARTDT)
Dates are in MM-DD-YYYY format unless specified

_____

☐ UTD

15. Did the patient have an infection during this hospitalization prior to the principal procedure? (INFECPTA)

☐ Yes
☐ No

16. Is there documentation that the patient expired during the timeframe from surgical incision through discharge from the post anesthesia care/recovery area? (PERIOPDEATH)

☐ Yes
☐ No

17. Were there any other procedures requiring general or spinal/epidural anesthesia that occurred within three days (four days for CABG or Other Cardiac Surgery) prior to or after the principal procedure during this hospital stay? (OTHERSURG)

☐ Yes
☐ No

18. Did the patient receive antibiotics within 24 hours of arrival or the day prior to arrival and/or during this hospital stay? (ANTIBIRCVD)

☐ Antibiotic received only within 24 hours of arrival or the day prior to arrival and not during hospital stay.
☐ Antibiotic received within 24 hours of arrival or the day prior to arrival and during hospital stay (arrival through 24 hours for PN and arrival through 48 hours postop [72 hours post op for CABG or Other Cardiac Surgery] for SCIP-Inf).
☐ Antibiotic received only during hospital stay (arrival through 24 hours for PN and arrival through 48 hours postop [72 hours post op for CABG or Other Cardiac Surgery] for SCIP-Inf).
☐ Antibiotic not received (within 24 hours of arrival or arrival through 24 hours for PN and arrival through 48 hours postop [72 hours post op for CABG or Other Cardiac Surgery] for SCIP-Inf), or unable to determine from medical record documentation.

19. What were the antibiotics administered any time after hospital arrival and within the specified timeframe? (ABXDETAILS)

Antibiotic Name (NAMEABX) (trade or generic) see Appendix C, Table 2.1.	**Antibiotic Administration Date (DTABX)** Dates are MM-DD-YYYY or UTD	**Antibiotic Administration Time (TMABX)** Times are military format HH:MM or UTD	**Antibiotic Administration Route (ROUTEABX)** Format: 1=PO/NG/PEG tube (Oral) 2=IV (Intravenous) 3=IM (Intramuscular) 10=UTD

20. **Were the only antibiotic combinations administered prior to hospital arrival or more than 24 hours prior to incision either oral Neomycin Sulfate + Erythromycin Base or oral Neomycin Sulfate + Metronidazole? (ORALANTIBIOTIC)**

☐ Yes
☐ No

21. **At what time was the anesthesia initiated for the principal procedure? (ANESTSTARTTM)HH:MM military format**

_____

☐ UTD

22. **At what time was the initial incision made for the principal procedure? (SURGINCISTM) HH:MM military format**

_____

☐ UTD

23. **On what date was the incision for the principal procedure made? (SURGINCISDT)** Dates are in MM-DD-YYYY format unless specified

_____

☐ UTD

24. **On what date did the anesthesia for the for the principal procedure end? (ANESTHENDDATE)** Dates are in MM-DD-YYYY format unless specified

_____

☐ UTD

25. **At what time did the anesthesia for the principal procedure end? (ANESTHENDTIME) HH:MM military format**

_____

☐ UTD

26. **What reason was documented postoperatively by the physician/APN/PA for extending the duration of the antibiotic administration past 24 hours (48 hours for CABG or Other Cardiac Surgery) after *Anesthesia End Time*?(RSNEXTABX)** ***(Select all that apply)***

☐ There is physician/advanced practice nurse/physician assistant (physician/APN/PA) documentation within 2 days (3 days for CABG or Other Cardiac Surgery) following the principal procedure with the day of surgery being day zero that erythromycin was administered postoperatively for the purpose of increasing gastric motility.

- ☐ There is physician/APN/PA documentation within 2 days (3 days for CABG or Other Cardiac Surgery) following the principal procedure with the day of surgery being day zero that an antibiotic was administered postoperatively for the treatment of hepatic encephalopathy.
- ☐ There is physician/APN/PA documentation within 2 days (3 days for CABG or Other Cardiac Surgery) following the principal procedure with the day of surgery being day zero that an antibiotic was administered postoperatively as prophylaxis of Pneumocystis pneumonia (PCP) to a patient with a diagnosis of AIDS.
- ☐ There is physician/APN/PA documentation within 2 days (3 days for CABG or Other Cardiac Surgery) following the principal procedure with the day of surgery being day zero that the patient had an infection.
- ☐ There is physician/APN/PA documentation within 2 days following the principal procedure with the day of surgery being day zero that the patient has a current malignancy of the lower extremity involving the same extremity as the principal procedure that was an original arthroplasty or a joint revision surgery.
- ☐ There is documentation within 2 days following the principal procedure with the day of surgery being day zero that the principal procedure was a joint revision surgery.
- ☐ No documented reason/Unable to Determine.

27. **What method of surgical site hair removal was performed prior to the principal procedure? (PREOPHRREM)** ***(Select all that apply)***

- ☐ No documented hair removal or no hair removal performed
- ☐ Razor
- ☐ Clippers/Scissors
- ☐ Depilatory
- ☐ Other
- ☐ Patient performed their own hair removal
- ☐ Unable to determine method
- ☐ Hair removal with a razor from the scrotal area OR from the scalp after a current traumatic head injury

28. Was there documentation that the procedure was performed using general or neuraxial anesthesia? (ANESTTYPE)

- ☐ There is documentation that the procedure was performed using general anesthesia.
- ☐ There is documentation that the procedure was performed using neuraxial anesthesia.
- ☐ There is documentation that the procedure was performed using **both** neuraxial and general anesthesia.
- ☐ There is no documentation that the procedure was performed using either general or neuraxial anesthesia or unable to determine from the medical record documentation.

29. Was there documentation that intentional hypothermia was utilized during the perioperative period? (INTENTHYPO)

☐ Yes
☐ No

30. Was there documentation of active warming used intraoperatively OR at least one body temperature equal to or greater than 96.8 degrees F/36 degrees C within the 30 minutes immediately prior to or the 15 minutes immediately after *Anesthesia End Time* in the medical record?(TEMPERATURE) *(Select all that apply)*

☐ 1 Active warming was performed intraoperatively.
☐ 2 There is documentation of at least one body temperature greater than or equal to 96.8 degrees F/36 degrees C within the 30 minutes immediately prior to or the 15 minutes immediately after Anesthesia End Time.
☐ 3 There is no documentation of Allowable Values 1 AND 2.
☐ 4 Unable to determine from the medical record documentation.

31. Is there documentation that the patient had a urinary catheter paced in the perioperative timeframe and that it was still in place at the time of discharge from the recovery/post-anesthesia care area? (URINECATH)

☐ There is documentation that an indwelling urethral catheter was placed perioperatively and was still in place at the time of discharge from the recovery/post-anesthesia care area.
☐ There is no documentation that an indwelling urethral catheter was placed perioperatively and was still in place at the time of discharge from the recovery/post-anesthesia care area.
☐ There is documentation that the patient had an indwelling urethral or suprapubic catheter or was being intermittently catheterized prior to the perioperative timeframe.
☐ There is documentation that the patient had a suprapubic catheter placed perioperatively and was still in place at the time of discharge from the recovery/post-anesthesia care area or the patient was being intermittently catheterized during the perioperative period.
☐ Unable to determine whether the patient had a catheter in place from medical record documentation.

32. Is there documentation that the urinary catheter was removed on POD 0 through POD 2 with the *Anesthesia End Date* being POD 0? (CATHREMOVE)

☐ There is documentation that the urinary catheter was removed on POD 0 through POD 2.
☐ There is no documentation that the urinary catheter was removed on POD 0 through POD 2.
☐ Unable to determine (UTD) from medical record documentation whether the urinary catheter was removed on POD 0 through POD 2.

33. Was there documentation of reason(s) for not removing the urinary catheter postoperatively? (REASONCNTCATH)

- ☐ There is documentation that the patient was in the intensive care unit (ICU) AND receiving diuretics.
- ☐ There is physician/advanced practice nurse/physician assistant (physician/APN/PA) documentation of reasons for not removing the urinary catheter postoperatively.
- ☐ There is no physician/APN/PA documentation of reasons for not removing the urinary catheter postoperatively or unable to determine from medical record documentation.

34. Is there documentation that the patient was on a daily beta-blocker therapy prior to arrival? (BBLKRCURRENT)

- ☐ Yes
- ☐ No

35. Was the patient taking the beta-blocker prior to arrival pregnant? (BBLKRPREG)

- ☐ Yes
- ☐ No
- ☐ UTD

36. Is there documentation that a beta-blocker was received during the perioperative period? (BBLKRPERIOP)

- ☐ Yes
- ☐ No

37. Was there documentation of reasons for not administering a beta-blocker during the perioperative period? (CTRBBLKPERIOP)

- ☐ Yes
- ☐ No

38. Is there documentation by a physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist in the medical record of a reason for not administering pharmacological and/or mechanical VTE prophylaxis? (CONTRAVTEPRO)

- ☐ There is physician/APN/PA or pharmacist documentation of a reason for not administering mechanical VTE prophylaxis.
- ☐ There is physician/APN/PA or pharmacist documentation of a reason for not administering pharmacological VTE prophylaxis.
- ☐ There is physician/APN/PA or pharmacist documentation of a reason for not administering both mechanical and pharmacological VTE prophylaxis.
- ☐ There is no physician/APN/PA or pharmacist documentation of a reason for not administering either mechanical or pharmacological VTE prophylaxis or unable to determine from medical record documentation.

39. **What type of VTE prophylaxis was documented in the medical record? (Collect any VTE prophylaxis that was ordered at anytime from hospital arrival to 24 hours after Anesthesia End time). (VTEPROA)**

VTE Prophylaxis Ordered (VTEPROPH) *(Select all that apply)*	**Was VTE Prophylaxis Timely? (VTETIMELY)**
☐ Low dose unfractionated heparin (LDUH)	☐ Yes ☐ No
☐ Low molecular weight heparin (LMWH)	☐ Yes ☐ No
☐ Intermittent pneumatic compression devices (IPC)	☐ Yes ☐ No
☐ Graduated compression stocking (GCS)	☐ Yes ☐ No
☐ Factor Xa Inhibitor	☐ Yes ☐ No
☐ Warfarin	☐ Yes ☐ No
☐ Venous foot pumps (VFP)	☐ Yes ☐ No
☐ Oral Factor Xa Inhibitor	☐ Yes ☐ No
☐ None of the above or not documented or unable to determine from medical record documentation	☐ Yes ☐ No

40. Did the patient have any allergies, sensitivities or intolerance to beta-lactam/penicillin antibiotic or cephalosporin medications? (ANTIALLERGY)

☐ Yes
☐ No

41. **What reason was documented for using vancomycin? (VANCO)**

(Select all that apply)

- ☐ Documentation of beta-lactam (penicillin or cephalosporin) allergy.
- ☐ Physician/APN/PA or pharmacist documentation of MRSA colonization or infection.
- ☐ Documentation of patient being high-risk due to acute inpatient hospitalization within the last year.
- ☐ Documentation of patient being high-risk due to nursing home or extended care facility setting within the last year, prior to admission.
- ☐ Physician/APN/PA or pharmacist documentation of increased MRSA rate, either facility-wide or operation-specific.
- ☐ Physician/APN/PA or pharmacist documentation of chronic wound care or dialysis.
- ☐ Documentation of continuous inpatient stay more than 24 hours prior to the principal procedure.
- ☐ Other Physician/APN/PA or pharmacist documented reason.
- ☐ No documented reason/Unable to Determine.
- ☐ Physician/APN/PA or pharmacist documentation of patient undergoing valve surgery.
- ☐ Documentation of patient being transferred from another inpatient hospitalization after a 3-day stay.

42. What was the patient's blood glucose level on postoperative day one (POD 1) closest to 6:00 A.M.? (GLUPOD1)

_____ (1-3000 mg per dL)

☐ UTD

43. What was the patient's blood glucose level on postoperative day two (POD 2) closest to 6:00 A.M.? (GLUPOD2)

_____ (1-3000 mg per dL)

☐ UTD

44. What is the first physician identifier? (PHYSICIAN_1)

_____

45. What is the second physician identifier? (PHYSICIAN_2)

_____

This material was prepared by the IFMC (Hospital Inpatient Quality Reporting Program Contractor) under contract with the Centers for Medicare & Medicaid Service (CMS), an agency of the US Department of Health and Human Services. It is based on *The Specifications Manual for National Hospital Inpatient Quality Measures*, which is a collaborative effort of CMS, The Joint Commission, SDPS, and the Hospital Inpatient Quality Reporting Program Contractor. 9SoW-IA-HIQRP-09/10-106