

**\*\*NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE\*\***

## Measure Information Form

**Measure Set:** Surgical Care Improvement Project (SCIP)

**Set Measure ID #:** SCIP-Inf-2

Set Measure ID #	Performance Measure Name
SCIP-Inf-2a	Prophylactic Antibiotic Selection for Surgical Patients - Overall Rate
SCIP-Inf-2b	Prophylactic Antibiotic Selection for Surgical Patients - CABG
SCIP-Inf-2c	Prophylactic Antibiotic Selection for Surgical Patients – Other Cardiac Surgery
SCIP-Inf-2d	Prophylactic Antibiotic Selection for Surgical Patients - Hip Arthroplasty
SCIP-Inf-2e	Prophylactic Antibiotic Selection for Surgical Patients - Knee Arthroplasty
SCIP-Inf-2f	Prophylactic Antibiotic Selection for Surgical Patients - Colon Surgery
SCIP-Inf-2g	Prophylactic Antibiotic Selection for Surgical Patients - Hysterectomy
SCIP-Inf-2h	Prophylactic Antibiotic Selection for Surgical Patients - Vascular Surgery

**Performance Measure Name:** Prophylactic Antibiotic Selection for Surgical Patients

**Description:** Surgical patients who received prophylactic antibiotics consistent with current guidelines (specific to each type of surgical procedure)

**Rationale:** A goal of prophylaxis with antibiotics is to use an agent that is safe, cost-effective, and has a spectrum of action that covers most of the probable intraoperative contaminants for the operation. First or second-generation cephalosporins satisfy these criteria for most operations, although anaerobic coverage is needed for colon surgery. Vancomycin is not recommended for routine use because of the potential for development of antibiotic resistance, but is acceptable if a patient is allergic to beta-lactams, as are fluoroquinolones and clindamycin in selected situations.

**Type of Measure:** Process

**Improvement Noted As:** An increase in the rate

**Numerator Statement:** Number of surgical patients who received prophylactic antibiotics recommended for their specific surgical procedure.

**Included populations:** Not Applicable

**Excluded Populations:** None

**Data Elements:**

- *Antibiotic Administration Route*
- *Antibiotic Allergy*
- *Antibiotic Name*
- *Oral Antibiotics*
- *Vancomycin*

The antibiotic regimens described in the table which follows later in this section reflect the combined, published recommendations of the American Society of Health-System Pharmacists, the Medical Letter, the Infectious Diseases Society of America, the Sanford Guide to Antimicrobial Therapy 2001, and the Surgical Infection Society.

**Denominator Statement:** All selected surgical patients with no evidence of prior infection

**Included Populations:**

- An *ICD-9-CM Principal Procedure Code* or *ICD-9-CM Other Procedure Codes* of selected surgeries (refer to Appendix A, Table 5.10 for ICD-9-CM codes)  
AND
- An *ICD-9-CM Principal Procedure Code* or *ICD-9-CM Other Procedure Codes* of selected surgeries (refer to Appendix A, Table 5.01-5.08 for ICD-9-CM codes)

**Excluded Populations:**

- Patients who had a principal or admission diagnosis suggestive of preoperative infectious diseases (refer to Appendix A, Table 5.09 for ICD-9-CM codes)
- Patients who were receiving antibiotics within 24 hours prior to arrival (except colon surgery patients taking oral prophylactic antibiotics)
- Patients who were receiving antibiotics more than 24 hours prior to surgery (except colon surgery patients taking oral prophylactic antibiotics)
- Patients who did not receive any antibiotics before or during surgery, or within 24 hours after surgery end time (i.e., patient did not receive prophylactic antibiotics)
- Patients who did not receive any antibiotics during this hospitalization
- Patients less than 18 years of age
- Patients with physician documented infection prior to surgical procedure of interest
- Patients whose procedure of interest occurred prior to date of admission

**Data Elements:**

- *Admission Date*
- *Admission Diagnosis of Infection*
- *Antibiotic Administration Date*
- *Antibiotic Administration Time*
- *Antibiotics During Stay*
- *Antibiotics Prior to Arrival*
- *Birthdate*
- *Early Antibiotics*
- *ICD-9-CM Other Procedure Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Principal Procedure Code*
- *Infection Prior to Anesthesia*
- *Infection Procedure of Interest*
- *Surgery End Date*
- *Surgery End Time*
- *Surgery Performed During Stay*
- *Surgery Start Date*
- *Surgical Incision Time*

**Risk Adjustment:** No

**Data Collection Approach:** Retrospective data sources for required data elements include administrative data and medical records.

**Data Accuracy:** Abstracted antibiotics are those administered from the time of arrival through the first 48 hours (72 hours for CABG and Other Cardiac Surgery) after the surgery end time. Refer to Appendix C, Table 2.1, which contains a complete listing of antibiotics.

**Measure Analysis Suggestions:** Consideration may be given to relating this measure to SCIP-Inf-1 and SCIP-Inf-3 in order to evaluate which aspects of antibiotic prophylaxis would most benefit from an improvement effort. The process owners for selection of appropriate antibiotics could include physicians, their assistants, hospital committees (i.e., QA, Infection Control, Pharmacy and Therapeutics, Surgical Section Subcommittees, etc.) any of which may choose to address this physician practice issue as part of a larger surgical infection prevention initiative.

**Sampling:** Yes, for additional information see the Sampling Section.

**Data Reported as:** Overall aggregate rate for all surgeries and stratified rates by data element *Infection Procedure of Interest*, generated from count data reported as a proportion

**Selected References:**

- Bratzler DW, Houck PM, for the Surgical Infection Prevention Guidelines Writers Group. Antimicrobial prophylaxis for surgery: An advisory statement from the National Surgical Infection Prevention Project. *CID*. 2004;38(15 July):1706-1715
- Mangram AJ, Horan TC, Pearson ML, et al. Guidelines for prevention of surgical site infection, 1999. *Infect Control Hosp Epidemiol*. 1999;20:247-280.

- American Society of Health-System Pharmacists. ASHP therapeutic guidelines on antimicrobial prophylaxis in surgery. *Am J Health Syst Pharm.* 1999;56:1839-1888.
- The Medical Letter. Antimicrobial prophylaxis in surgery. *Med Lett Drugs Ther.* 1999;41:75-80.
- Dellinger EP, Gross PA, Barrett TL, et al. Quality standard for antimicrobial prophylaxis in surgical procedures. *Clin Infect Dis.* 1994;18:422-427.
- Gilbert DN, Moellering RC Jr., Sande MA, eds. *The Sanford Guide to Antimicrobial Therapy.* 31<sup>st</sup> ed. Hyde Park, VT: Antimicrobial Therapy, Inc; 2001.pp.116-117.
- Page CP, Bohnen JM, Fletcher JR, et al. Antimicrobial prophylaxis for surgical wounds. *Arch Surg.* 1993;128:79-88.

## Prophylactic Antibiotic Regimen Selection for Surgery

Surgical Procedure	Approved Antibiotics
<b>CABG, Other Cardiac or Vascular</b>	Cefazolin, Cefuroxime, Cefamandole Table 3.1 or Vancomycin** Table 3.8 If $\beta$ -lactam allergy: Vancomycin* Table 3.8 or Clindamycin* Table 3.9
<b>Hip/Knee Arthroplasty</b>	Cefazolin or Cefuroxime Table 3.2 or Vancomycin** Table 3.8 If $\beta$ -lactam allergy: Vancomycin* Table 3.8 or Clindamycin* Table 3.9
<b>Colon</b>	Oral: after effective mechanical bowel preparation, Neomycin Sulfate Table 3.3 + Erythromycin Base Table 3.4 <b>OR</b> Neomycin Sulfate Table 3.3 + Metronidazole Table 3.4 Administered for 18 hours preoperatively  Parenteral: Cefotetan, Cefoxitin, Cefmetazole, or Ampicillin/Sulbactam Table 3.5 <b>OR</b> Cefazolin Table 3.6 + Metronidazole Table 3.6a  If $\beta$ -lactam allergy: Clindamycin Table 3.9 + Gentamicin Table 3.11, or Clindamycin Table 3.9 + Quinolone Table 3.12, or Clindamycin Table 3.9 + Aztreonam Table 2.7 <b>OR</b> Metronidazole Table 3.6a with Gentamicin Table 3.11, or Metronidazole Table 3.6a + Quinolone Table 3.12
<b>Hysterectomy</b>	Cefotetan, Cefazolin, Cefoxitin, Cefuroxime, or Ampicillin/Sulbactam Table 3.7  If $\beta$ -lactam allergy: Clindamycin Table 3.9 + Gentamicin Table 3.11, or Clindamycin Table 3.9 + Quinolone Table 3.12 or Clindamycin Table 3.9 + Aztreonam Table 2.7 <b>OR</b> Metronidazole Table 3.6a + Gentamicin Table 3.11, or Metronidazole Table-3.6a + Quinolone Table 3.12 <b>OR</b> Clindamycin monotherapy Table 3.9
<b>Special Considerations</b>	*For cardiac, orthopedic, and vascular surgery, if the patient is allergic to $\beta$ -lactam antibiotics, Vancomycin or Clindamycin are acceptable substitutes. **Vancomycin is acceptable with a physician documented justification for its use (see data element <i>Vancomycin</i> )

## SCIP-Inf-2: Prophylactic Antibiotic Selection for Surgical Patients

**Numerator:** Number of surgical patients who received prophylactic antibiotics recommended for their specific surgical procedure .

**Denominator:** All selected surgical patients with no evidence of prior infection .

**Variable Key:**

Patient Age  
Antibiotic Days I  
Antibiotic Timing I  
Surgery Days  
Surgery Match

















