

****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* 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).

Excluded Populations:

- Patients less than 18 years of age
- Patients who have a length of Stay >120 days
- 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 a *Joint Revision*
- Patients who expired perioperatively
- Patients who were receiving antibiotics more than 24 hours prior to surgery (except colon surgery patients taking oral prophylactic antibiotics)
- Patients who were receiving antibiotics within 24 hours prior to arrival (except colon surgery patients taking oral prophylactic antibiotics)
- Patients who did not receive any antibiotics before or during surgery, or within 24 hours after *Anesthesia End Time* (i.e., patient did not receive prophylactic antibiotics)
- Patients who did not receive any antibiotics during this hospitalization

Data Elements:

- *Anesthesia End Date*
- *Anesthesia End Time*
- *Anesthesia Start Date*
- *Admission Date*
- *Antibiotic Administration Date*
- *Antibiotic Administration Time*
- *Antibiotic Received*
- *Birthdate*
- *Clinical Trial*
- *Discharge Date*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Principal Procedure Code*
- *Infection Prior to Anesthesia*
- *Joint Revision*
- *Laparoscope*
- *Perioperative Death*
- *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 or Other Cardiac Surgery) after the *Anesthesia 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/APNs/PAs and hospital committees (i.e., QA, Infection Control, Pharmacy and Therapeutics, Surgical Section Subcommittees, etc.) any of which may choose to address this physician/APN/PA practice issue as part of a larger surgical infection prevention initiative.

Sampling: Yes, for additional information see the Population and Sampling Specifications Section.

Data Reported As: Overall aggregate rate for all surgeries and stratified rates by data element *ICD-9-CM Principal Procedure Code*, 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.
- No author listed. Treatment Guidelines from The Medical Letter. Antimicrobial Prophylaxis for Surgery. *Med Lett Drugs Ther* 2006; 52: 83-88
- 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*. 31st ed. Hyde Park, VT: Antimicrobial Therapy, Inc; 2001.pp.116-117.
- Itani KMF, Wilson SE, Awad SS, Jensen EH, Finn TS, Abramson MA. Ertapenem versus cefotetan prophylaxis in elective colorectal surgery. *N Engl J Med*. 2006 Dec 21; 355 (25): 2640-2651.
- Page CP, Bohnen JM, Fletcher JR, et al. Antimicrobial prophylaxis for surgical wounds. *Arch Surg*. 1993;128:79-88. American College of Obstetricians and Gynecologists (ACOG) Committee on Practice Bulletins. ACOG Practice Bulletin No. 74 Antibiotic prophylaxis for gynecologic procedures. *Obstet Gynecol* July 2006; 108(1):225-34

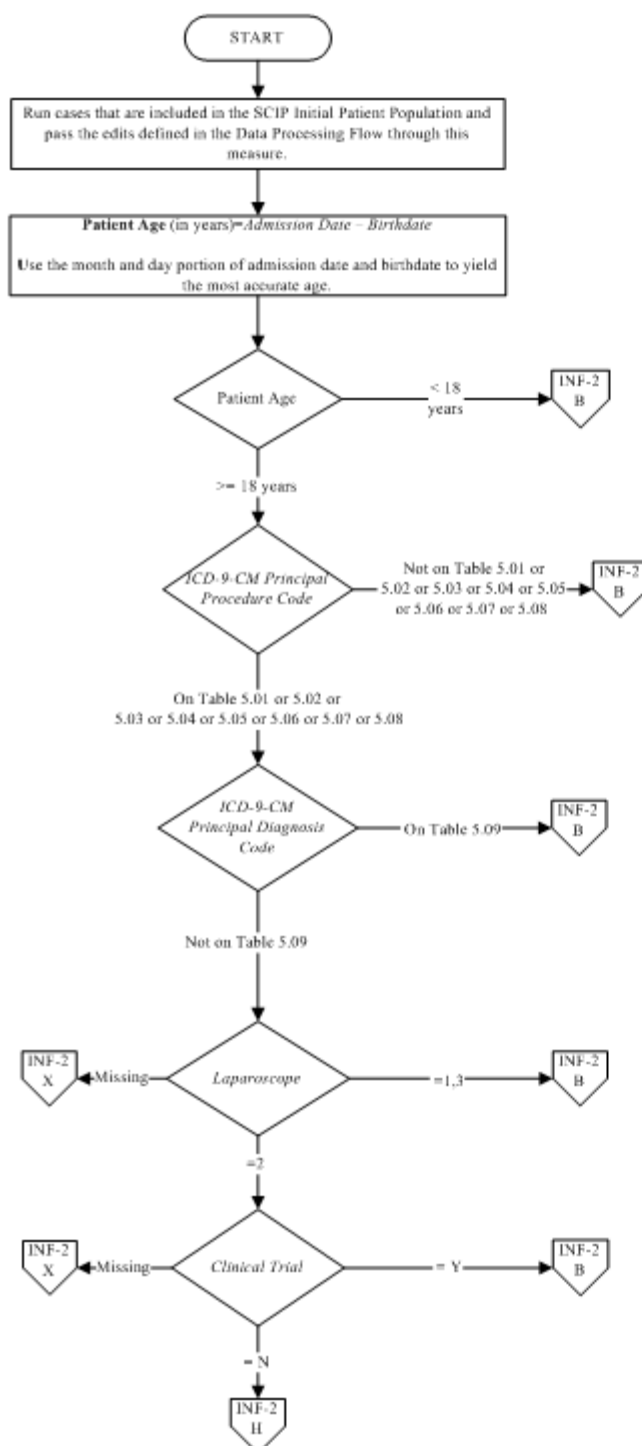
Prophylactic Antibiotic Regimen Selection for Surgery

Surgical Procedure	Approved Antibiotics
CABG, Other Cardiac or Vascular	Cefazolin, Cefuroxime, Table 3.1 or Vancomycin** Table 3.8 If β -lactam allergy: Vancomycin* Table 3.8 or Clindamycin* Table 3.9
Hip/Knee Arthroplasty	Cefazolin or Cefuroxime Table 3.2 or Vancomycin** Table 3.8 If β -lactam allergy: Vancomycin* Table 3.8 or Clindamycin* Table 3.9
Colon	Cefotetan, Cefoxitin, Ampicillin/Sulbactam Table 3.5, or Ertapenem† Table 3.6b OR Cefazolin or Cefuroxime Table 3.2 + Metronidazole Table 3.6a If β -lactam allergy: Clindamycin Table 3.9 + Aminoglycoside Table 2.11, or Clindamycin Table 3.9 + Quinolone Table 3.12, or Clindamycin Table 3.9 + Aztreonam Table 2.7 OR Metronidazole Table 3.6a with Aminoglycoside Table 2.11, or Metronidazole Table 3.6a + Quinolone Table 3.12
Hysterectomy	Cefotetan, Cefazolin, Cefoxitin, Cefuroxime, or Ampicillin/Sulbactam Table 3.7 If β -lactam allergy: Clindamycin Table 3.9 + Aminoglycoside Table 2.11 or Clindamycin Table 3.9 + Quinolone Table 3.12 or Clindamycin Table 3.9 + Aztreonam Table 2.7 OR Metronidazole Table 3.6a + Aminoglycoside Table 2.11 or Metronidazole Table 3.6a + Quinolone Table 3.12
Special Considerations	*For cardiac, orthopedic, and vascular surgery, if the patient is allergic to β -lactam antibiotics, Vancomycin or Clindamycin are acceptable substitutes. **Vancomycin is acceptable with a physician/APN/PA/pharmacist documented justification for its use (see data element <i>Vancomycin</i>) † A single dose of ertapenem is recommended for colon procedures.

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
 Antibiotic Days II
 Antibiotic Timing II
 Surgery Days

Stratification Table:		
Set#	Stratified By	*Principal Procedure Code (Allowable Value)
SCIP-INF2a	Overall Rate	**
SCIP-INF2b	CABG	Table 5.01
SCIP-INF2c	Other Cardiac Surgery	Table 5.02
SCIP-INF2d	Hip Arthroplasty	Table 5.04
SCIP-INF2e	Knee Arthroplasty	Table 5.05
SCIP-INF2f	Colon Surgery	Table 5.03
SCIP-INF2g	Hysterectomy	Table 5.06 Or 5.07
SCIP-INF2h	Vascular Surgery	Table 5.08

* This refers to the data element 'ICD-9-CM Principal Procedure Code'. Each case will be stratified according to the principal procedure code, after the Category Assignments are completed and the overall rate is calculated.

** No allowable value exists for the overall rate. It includes all procedures on Tables 5.01 to 5.08.

