

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

Measure Information Form

Measure Set: Surgical Infection Prevention (SIP)

Set Measure ID #: SIP-3

| Set Measure ID # | Performance Measure Name |
|------------------|--|
| SIP-3a | Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Overall Rate |
| SIP-3b | Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - CABG |
| SIP-3c | Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Cardiac Surgery |
| SIP-3d | Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Hip Arthroplasty |
| SIP-3e | Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Knee Arthroplasty |
| SIP-3f | Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Colon Surgery |
| SIP-3g | Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Hysterectomy |
| SIP-3h | Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Vascular Surgery |

Performance Measure Name: Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time

Description: Surgical patients whose prophylactic antibiotics were discontinued within 24 hours after surgery end time

Rationale: A goal of prophylaxis with antibiotics is to provide benefit to the patient with as little risk as possible. It is important to maintain therapeutic serum and tissue levels throughout the operation. Intraoperative re-dosing may be needed for long operations. However, administration of antibiotics for more than a few hours after the incision is closed offers no additional benefit to the surgical patient. Prolonged administration does increase the risk of *Clostridium difficile* infection and the development of antimicrobial resistant pathogens.

Type of Measure: Process

Improvement Noted As: An increase in the rate

Numerator Statement: Number of surgical patients whose prophylactic antibiotics were discontinued within 24 hours after surgery end time

Included Populations: Not Applicable

Excluded Populations: None

Data Elements:

- *Antibiotic Administration Date*
- *Antibiotic Administration Time*
- *Surgery End Time*
- *Surgery End Date*

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

Included Populations:

- *ICD-9-CM Principal Procedure Code* or *ICD-9-CM Other Procedure Code* 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 were diagnosed with and treated for infections within two days after surgery end date
- 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 who had other procedures of interest during this stay

Data Elements:

- *Admission Date*
- *Admission Diagnosis of Infection*
- *Antibiotics During Stay*
- *Antibiotic Name*
- *Antibiotics Prior to Arrival*
- *Birthdate*
- *Date of Infection*
- *ICD-9-CM Other Procedure Code*
- *ICD-9-CM Principal Diagnosis Code*

- *ICD-9-CM Principal Procedure Code*
- *Infection Prior to Anesthesia*
- *Oral Antibiotics*
- *Other Surgeries*
- *Postoperative Infections*
- *Prophylactic Antibiotic*
- *Surgery Performed During Stay*
- *Surgery Start Date*
- *Surgical Incision Time*
- *Type of Surgery*

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 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 SIP-1 and SIP-2 in order to evaluate to which aspects of antibiotic prophylaxis would most benefit from an improvement effort. The process-owners of the timing of discontinuation of antibiotics subsequent to surgery include physicians and their assistants, the post-surgical recovery team, as well as the postoperative nursing unit. By including the appropriate groups involved in the postoperative care process, one can more clearly ascertain where in the process the team may need to focus for improvement.

Sampling: Yes, for additional information see the Sampling section

Data Reported As: Overall aggregate rate for all surgeries and stratified rates by data element *Type of Surgery*, 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. <http://www.ahrq.gov/clinic/ptsafety/chap20a.htm>
- Scher KS. Studies on the duration of antibiotic administration for surgical prophylaxis. *Am Surg*. 1997;63:59-62.
- McDonald M, Grabsch E, Marshall C, et al. Single- versus multiple-dose antimicrobial prophylaxis for major surgery: a systemic review. *Aust N Z J Surg*. 1988;68:388-396.
- Crabtree TD, Pelletier SJ, Gleason TG, et al. Clinical characteristics and antibiotic utilization in surgical patients with *Clostridium difficile*-associated diarrhea. *Am Surg*. 1999;65:507-511.

SIP-3: Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time

Numerator: Number of surgical patients whose prophylactic antibiotics were discontinued within 24 hours after surgery end time.

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

Variable Key:

- Patient Age
- Antibiotic Days I
- Antibiotic Days II
- Antibiotic Timing I
- Antibiotic Timing II
- Post Operative Infection Days











