

SCIP-INF-3: Prophylactic antibiotics discontinued within 24 hours after surgery end time

NQF# 0529

Developer: Centers for Medicare & Medicaid Services/The Joint Commission

Data Source: [CMS Hospital Compare](#)

Description: This measure is used to assess the percent of surgical patients whose prophylactic antibiotics were discontinued within 24 hours after anesthesia end time (within 28 hours for CABG or other cardiac surgery).

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.

Evidence for Rationale:

- [Specifications manual](#) for national hospital inpatient quality measures, version 3.1a. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2010 Apr 1. Various p.

Numerator: Number of surgical patients whose prophylactic antibiotics were discontinued within 24 hours after anesthesia end time (48 hours for CABG or other cardiac surgery).

Denominator: All selected surgical patients with no evidence of prior infection (see Appendix A, Table 5.10 and Tables 5.01-5.08 of the [Specifications Manual](#) for the list of selected surgeries).

Impact:

- Affects large numbers, frequently performed procedure
- 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.

Evidence of High Impact:

- Delgado-Rodriguez M, Sillero-Arenas M, Medina-Cuadros M, Martinez-Fallego G. Nonsocomial 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* 2000; 66:105-111.
- Zhan C, Miller MR. Excess length of stay, charges and mortality attributable to medical injuries during hospitalization. *JAMA* 2003; 290:1868-1874.

Opportunity:

- Opportunity for improvement exists, as demonstrated by the coefficient of variation for the measure.

Evidence:

- This measure is supported by evidence. A formal assessment of the evidence rated the evidence from 1A to 2C.
- The majority of published evidence shows that prophylaxis after wound closure is unnecessary. Prolonged use can promote resistance.

Citations for Evidence:

- Bratzler DS, Houk PM for the Surgical Infection Prevention Guideline Writers Workgroup. Antimicrobial prophylaxis for surgery: An advisory statement from the National Surgical Infection Prevention Project. *CID* 2004; 38L 1706-1715.
- Scher KS. Studies on the duration of antibiotic administration for surgical prophylaxis.

References:

<http://qualitymeasures.ahrq.gov/content.aspx?id=27413&search=antibiotic+discontinued>
<http://www.qualityforum.org/Projects/s-z/Surgery/0529.aspx>