

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

Measure Information Form

Measure Set: Surgical Care Improvement Project (SCIP)

Set Measure ID#: SCIP-Inf-9

Performance Measure Name: Urinary catheter removed on Postoperative Day 1 (POD 1) or Postoperative Day 2 (POD 2) with day of surgery being day zero.

Description: Surgical patients with urinary catheter removed on Postoperative Day 1 or Postoperative Day 2 with day of surgery being day zero.

Rationale: It is well-established that the risk of catheter-associated urinary tract infection (UTI) increases with increasing duration of indwelling urinary catheterization. In 2000, Saint reported the results of a pooled analysis of 10 prospective trials dating from 1983 to 1995 which estimated that bacteriuria will develop in 26% of patients after 2 to 10 days of catheterization (95% CI 23-25%). Additional pooled analyses demonstrated that 24 % (95% CI 16% to 32%) of those patients will develop symptomatic UTI and bacteremia will develop in 3.6%. Among surgical patients, two studies of postoperative patients discharged to subacute care with urinary catheters were more likely to be readmitted to the hospital with a UTI compared with those who had catheters removed prior to hospital discharges (Wald, 2005 and Wald, 2008). Among selected major surgical patients in the Surgical Infection Project (SIP) cohort, Wald demonstrated (in press) that 85% had perioperative indwelling catheters placed and half of those patients had catheters for greater than 2 days postoperatively. These patients were twice as likely to develop UTIs prior to hospital discharge. On multivariate analysis, those who had indwelling bladder catheters for more than 2 days postoperatively were 21 % more likely to develop UTI, significantly less likely to be discharged to home, and had a significant increase in mortality at 30 days. Additional analyses suggest that there is sizeable variation in the duration of postoperative catheterization among hospitals and that hospital factors may account for this variation. In 2006, Stephan reported the results of a multifaceted intervention study in orthopedic surgery patients in which protocols limiting the use and duration of postoperative catheterization played a large role. They reported a resultant 60% reduction in UTI incidence-density.

Type of Measure: Process

Improvement Noted As: An increase in the rate.

Numerator Statement: Number of surgical patients whose urinary catheter is removed on POD 1 or POD 2 with day of surgery being day zero.

Included Populations: Not Applicable

Excluded Populations: None

Data Elements:

Catheter Removed

Denominator Statement: All selected surgical patients with a catheter in place postoperatively.

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).

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 (refer to 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 who had a urological, gynecological or perineal procedure performed (refer to Appendix A, Table 5.16 for ICD-9-CM codes)
- Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
- 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 episodes) during this hospital stay
- Patients with physician/advanced practice nurse/physician assistant (physician/APN/PA) documented infection prior to surgical procedure of interest
- Patients who expired perioperatively
- Patients whose length of stay was less than two days postoperatively
- Patients who had a suprapubic catheter or had intermittent catheterization preoperatively.
- Patients who did not have a catheter in place postoperatively.
- Patients who had physician/APN/PA documentation of a reason for not removing the urinary catheter postoperatively.

Data Elements:

- *Admission Date*
- *Anesthesia End Date*
- *Anesthesia Start Date*
- *Birthdate*
- *Clinical Trial*

- *Discharge Date*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Principal Procedure Code*
- *ICD-9-CM Other Procedure Code*
- *Infection Prior to Anesthesia*
- *Laparoscope*
- *Other Surgeries*
- *Perioperative Death*
- *Reasons for Continuing Urinary Catheterization*
- *Urinary Catheter*

Risk Adjustment: No

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

Data Accuracy:

Measure Analysis Suggestions: The process-owners for timing of catheter removal, as assessed in this measure, may include clinicians and support staff on the nursing unit. Opportunities may exist in several arenas which, when addressed jointly, can generate true process improvement.

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:

- Saint S. Clinical and economic consequences of nosocomial catheter-related bacteremia. *Am J Infect Control* 2000; 28: 68-75.
- Stephan F, Sax H, Wachsmuth M, et al. Reduction of urinary tract infection and antibiotic use after surgery: a controlled, prospective before-after study. *Clin Infect Dis.* 2006; 42; 1544.
- Wald HL, Ma A, Bratzler DW, Kramer AM. Indwelling Urinary Catheter Use in the Postoperative Period: Analysis of The National Surgical Infection Prevention Project Data. *Arch Surg.* In press.
- Wald H, Epstein A, Kramer A. Extended Urinary Catheterization Among Hip Fracture Patients Discharged to Skilled Nursing Facilities. *Med Care* 2005; 43:1009-1017.
- Wald HL, Epstein AM, Radcliff TA, Kramer AM. Extended Use of Urinary Catheters in Older Surgical Patients: A Patient Safety Problem? *Infect Cont Hosp Epidemiol* 2008; 29:116-124.