

## SCIP-Inf-9: Urinary catheter removed on postoperative day 1 or 2 with day of surgery being day zero

**NQF#:** 0453

**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 with urinary catheter removed on postoperative day 1 (POD 1) or POD 2 with the 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. Additional pooled analyses demonstrated that 24% 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 hospitals with a UTI compared with those who had catheters removed prior to hospital discharges (Wald, 2005; Wald, 2008). Among selected major surgical patients in the Surgical Infection Project (SIP) cohort, Wald demonstrated 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 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.

**Evidence for Rationale:**

- Saint S. Clinical & economic consequences of nosocomial catheter-related bacteriuria. *Am J Infect Control* 2000 Feb; 28(1):68-75.
- [Specifications manual](#) for national hospital inpatient quality measures, version 3.1a. Centers for Medicare and Medicaid Services (CMS), The Joint Commission; 2010 Apr 1. Various p.
- Stephan F, Sax H, Wachsmuth M, Hoffmeyer P, Clergue F, Pittet D. Reduction of urinary tract infection and antibiotic use after surgery: a controlled, prospective, before-after intervention study. *Clin Infect Dis* 2006 Jun; 42(11):1544-51.
- Wald H, Epstein A, Kramer A. Extended use of indwelling urinary catheters in postoperative hip fracture patients. *Med Care* 2005 Oct; 43(10):1009-17.
- 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*. 2008 Jun; 143(6):551-7.
- Wald HL, Epstein AM, Radcliff TA, Karger AM. Extended use of urinary catheters in older surgical patients: A patient safety problem. *Infect Control Hosp Epidemiol* 2008 Feb; 29(2):116-24.

**Numerator:** # of surgical patients whose urinary catheter is removed on POD 1 or POD 2 with day of survey being day zero.

**Denominator:** All selected surgical patients with a catheter in place postoperatively (see related Appendix A, Table 5.10 of the [Specifications Manual](#) for the list of selected surgeries).

**Impact:**

- Affects large numbers of patients
- Postoperative surgical patients discharged to subacute care with urinary catheters are more likely to be readmitted to hospitals with a UTI compared to those who had catheters removed prior to discharge.
- 85% of selected major surgical patients with perioperative indwelling catheters for greater than 2 days postoperatively were twice as likely to develop UTIs prior to hospital discharge.

**Evidence of High Impact:**

- Wald H, Epstein A, Kramer A. Extended use of indwelling urinary catheters in postoperative hip fracture patients. *Med Care* 2005 Oct; 43(10):1009-17.
- 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*. 2008 Jun; 143(6):551-7.
- Wald HL, Epstein AM, Radcliff TA, Karger AM. Extended use of urinary catheters in older surgical patients: A patient safety problem. *Infect Control Hosp Epidemiol* 2008 Feb; 29(2):116-24.

**Opportunity:**

- Opportunity for improvement exists, based on the coefficient of variation for the measure