

Measure Information Form

Measure Set: Surgical Care Improvement Project (SCIP)

Set Measure ID#: SCIP-Inf-10

Performance Measure Name: Surgery Patients with Perioperative Temperature Management.

Description: Surgery patients for whom either active warming was used intraoperatively for the purpose of maintaining normothermia or who had at least one body temperature equal to or greater than 96.8° F/36° C recorded within the 30 minutes immediately prior to or the 15 minutes immediately after *Anesthesia End Time*.

Rationale: Core temperatures outside the normal range pose a risk in all patients undergoing surgery. According to the Clinical Guidelines for the Prevention of Unplanned Perioperative Hypothermia by the American Society of PeriAnesthesia Nurses (ASPAN, 2001), published research has correlated impaired wound healing, adverse cardiac events, altered drug metabolism, and coagulopathies with unplanned perioperative hypothermia. A study by Kurtz, et al (1996), found that incidence of culture-positive surgical site infections among those with mild perioperative hypothermia was three times higher than the normothermic perioperative patients. In this study, mild perioperative hypothermia was associated with delayed wound closure and prolonged hospitalization. In a meta-analysis of outcomes and costs, Mahoney and Odom (1999), demonstrated that hypothermia is associated with a significant increase in adverse outcomes, including an increased incidence of infections. The authors also concluded that hypothermia is associated with an increased chance of blood products administration, myocardial infarction, and mechanical ventilation. These adverse outcomes resulted in prolonged hospital stays and increased healthcare expenditures.

Type of Measure: Process

Improvement Noted As: An increase in the rate.

Numerator Statement: Surgery patients for whom either active warming was used intraoperatively for the purpose of maintaining normothermia or who had at least one body temperature equal to or greater than 96.8° F/36° C recorded within the 30 minutes immediately prior to or the fifteen minutes immediately after *Anesthesia End Time*.

Included Populations: Not applicable

Excluded Populations: None

Data Elements:

Temperature

Denominator Statement: All patients, regardless of age, undergoing surgical procedures under general or neuraxial anesthesia of greater than or equal to 60 minutes duration

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 who have a length of stay >120 days
- Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
- Patients whose length of anesthesia was less than 60 minutes
- Patients who did not have general or neuraxial anesthesia
- Patients with physician/APN/PA documentation of *Intentional Hypothermia* for the procedure performed.

Data Elements:

- *Admission Date*
- *Anesthesia Type*
- *Anesthesia End Date*
- *Anesthesia Start Date*
- *Anesthesia End Time*
- *Anesthesia Start Time*
- *Discharge Date*
- *ICD-9-CM Principal Procedure Code*
- *Intentional Hypothermia*

Risk Adjustment: No

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

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: In analyzing any unexpected measure rates for SCIP-Inf-10, hospitals may find it useful to examine the consistency with which temperatures are documented after surgery. Inconsistent documentation will reduce the hospital's score.

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

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:

- American Society of PeriAnesthesia Nurses. Clinical Guidelines for the prevention of unplanned perioperative hypothermia. 2001 PMID: 00000F.
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- Hooper V: Perioperative thermoregulation: A survey of clinical practices. Paper presented at the Consensus Conference on Perioperative Thermoregulation, ASPAN, Bethesda, MD, 1998. PMID: 15096446.
- Frank SM, Beattie C, Christopherson R, et al: Epidural versus general anesthesia, ambient operating room temperature, and patient age as predictors of inadvertent hypothermia. *Anesthesiology.* 77:252-257, 1992. PMID: 1642343.
- Carli F, Emery P, Freemantle C: Effect of intraoperative normothermia on postoperative protein metabolism in elderly patients undergoing hip arthroplasty. *Br J Anaesth.* 63:276-282, 1989. PMID: 2803885.
- Bennett J, Ramachandra V, Webster J, et al: Prevention of hypothermia during hip surgery: Effect of passive compared with active skin surface warming. *Br J Anaesth.* 73:180-183, 1994. PMID: 7917732.
- Kurz A, Sessler DI, Lenhardt R: Perioperative normothermia to reduce the incidence of surgical-wound infection and shorten hospitalization. *N Engl J Med.* 334:1209-1215, 1996 [Accompanied by an editorial; 334:1263-1264.] PMID: 8606715.
- Sessler DI: Current concepts: Mild intraoperative hypothermia. *N Engl J Med.* 336:1730-1737, 1997. PMID: 9180091.
- Brauer A, Perl T, Uyanik Z, et al: Perioperative thermal insulation: minimally clinically important differences? *Br J Anaesth.* 2004 Jun;92(6):836-840. Epub 2004 Apr 19.
- Sessler DI. A proposal for new temperature monitoring and thermal management guidelines. *Anesthesiology.* 1998; 89 (5):1298-1300.