TEMP 02 Review - July 25, 2022

Review TEMP 02 Measure Specification by selecting this link

Feedback from Measure Reviewers

Review of new literature (last review July 2019)

Dr. Jonathan Kaper
Excellent literature review in the January 2021 issue of Anesthesiology: https://pubs.asahq.org/anesthesiology/article/134/1/111/108291/Perioperative-Temperature-Monitoring

Appropriateness of rationale

Dr. Jonathan Kaper
All general anesthetics impair thermoregulatory control by reducing the triggering core temperature for the major cold defenses, which are arterio-venous shunt constriction and shivering.[1,2] Neuraxial anesthesia also impairs thermoregulation by preventing vasoconstriction and shivering in blocked regions.[3] Thermoregulatory impairment combined with a cool operating room environment and surgical exposure makes nearly all unwarmed surgical patients hypothermic. Randomized trials show that even mild hypothermia causes serious complications including surgical wound infection,[4] coagulopathy and increased allogeneic transfusions,[5] and delayed postanesthetic recovery.[6] Core temperature measurements are less variable than skin temperature measurements and more accurately represent body temperature.[7,8,9] 1. Matsukawa T, Kurz A, Sessler DI, Bjorksten AR, Merrifield B, Cheng C: Propofol linearly reduces the vasoconstriction and shivering thresholds. Anesthesiology. 1995;

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2. Xiong J, Kurz A, Sessler DI, Plattner O, Christensen R, Dechert M, Ikeda T: Isoflurane produces marked and nonlinear decreases in the vasoconstriction and shivering thresholds. Anesthesiology. 1996; 85:240–5
3. Matsukawa T, Sessler DI, Christensen R, Ozaki M, Schroeder M: Heat flow and distribution during epidural anesthesia. Anesthesiology. 1995; 83:961–7
4. Kurz A, Sessler DI, Lenhardt R: Perioperative normothermia to reduce the incidence of surgical-wound infection and shorten hospitalization. Study of Wound Infection and Temperature Group. N Engl J Med. 1996; 334:1209–15
5. Rajagopalan S, Mascha E, Na J, Sessler DI: The effects of mild perioperative hypothermia on blood loss and transfusion requirement. Anesthesiology. 2008; 108:71–7
6. Lenhardt R, Marker E, Goll V, Tschernich H, Kurz A, Sessler DI, Narzt E, Lackner F: Mild intraoperative hypothermia prolongs postanesthetic recovery. Anesthesiology. 1997; 87:1318–23
7. Sun Z, Honar H, Sessler DI, et al. Intraoperative core temperature patterns, transfusion requirement, and hospital duration in patients warmed with forced air. *Anesthesiology.* 2015;122(2):276-285.
8. Insler SR, Sessler DI. Perioperative thermoregulation and temperature monitoring. *Anesthesiology clinics.* 2006;24(4):823-837.
9. Sessler DI. Temperature monitoring and perioperative thermoregulation. *Anesthesiology.* 2008;109(2):318-338.

Evaluation of inclusion/ exclusion criteria

Dr. Jonathan Kaper
Current inclusion criteria: All surgical patients receiving general anesthesia. Would recommend including adding all surgical patients receiving neuraxial anesthesia based on the "appropriateness of rationale."

Evaluation of definition of success or flagged cases

Dr. Jonathan Kaper
Current: Cases with at least one core temperature documented between Anesthesia Start and Patient out of Room. If not available then, Anesthesia End. No changes recommended.

Other feedback

Dr. Jonathan Kaper
Core temperatures include: pulmonary artery, distal esophagus, nasopharynx, and tympanic membrane. Near core temperatures include: Oral and axillary-temperatures. Currently, bladder and rectal temperatures are included in the MPOG list of core and near core temperatures. The literature review indicated these are less reliable because both sites are poorly perfused and lag core temperature.[10,11,12,13] Would recommend excluding them from core temperature. 10. Horrow JC, Rosenberg H: Does urinary catheter temperature reflect core temperature during cardiac surgery? Anesthesiology. 1988; 69:986–9 11. Iaizzo PA, Kehler CH, Zink RS, Belani KG, Sessler DI: Thermal response in acute porcine malignant hyperthermia. Anesth Analg. 1996; 82:803–9 12. Ash CJ, Cook JR, McMurry TA, Auner CR: The use of rectal temperature to monitor heat stroke. Mo Med. 1992; 89:283–8 13. Buck SH, Zaritsky AL: Occult core hyperthermia complicating cardiogenic shock. Pediatrics. 1989; 83:782–4

Recommendation from Dr. Jonathan Kaper for TEMP 02

	Dr. Jonathan Kaper
Keep as is: no changes at all	☐

Modify: changes to measure specifications	☑
Retire: eliminate entirely from dashboard and emails	☐

Recommended modifications (if applicable)

1. **Add neuraxial cases as inclusion criteria**
2. **Remove bladder temperature as core temperature**
3. **Remove rectal temperature as core temperature**