(A) Policy Statement

The perioperative clinicians will maintain normothermia for the surgical patient in the pre-op, intra-op, and post operative setting. (American Society of Perianesthesia Nurses, 2017).

(B) Purpose of Policy

To standardize the thermal care of the surgical patient throughout the perioperative process.

(C) Procedure

1. ASSESSMENT: Will be identical for each phase of the perioperative process, the minimum assessment requirements are;
   - Measure patient’s temperature on admission
   - Identify patient risk factors for hypothermia; i.e. general or neuraxial anesthesia, elderly.
   - Determine patients thermal comfort level (ask the patient if he/she is cold? If yes, even with a normal temperature (over or = to 36.0C) the clinician will follow the hypothermic pathway.
   - Observe for signs/symptoms of hypothermia (shivering, piloerection, and or cold extremities). If yes the clinician will follow the hypothermic pathway.

2. INTERVENTION:
   - Refer to addendum; “Promotion of Perioperative Normothermia” Algorithm. Follow the appropriate pathway for each phase of the surgical process.
   - Passive warming measures: warm blankets, socks, head covering and limited skin exposure.
   - Active warming measure: forced air warming system (Bair Hugger), warm fluids, increased room temperature.
   - Monitor temperature every 30 minutes until normothermia is achieved.

3. OUTCOMES:
   - The patient’s core temperature will be maintained at or above 36.0 C (96.8 F) for all peri-operative phases. Refer to the addendum for phase specific expected outcomes in addition to the above listed.

### Approved by:

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Nursing Director, Endoscopy and Surgical Support Services

**Review Policy & Standard Committee, 2/2015, 5/2017**
**Review/Revision Completed By Toni Woodley, RN & Nancy Ganger, MSN, RN**

**Review/Revision Date:**
- 8/27/2012
- 2/17/2015
- 5/1/2017

**Next Review Date:** 5/1/2020

**Policies Superseded by This Policy:**

> It is the responsibility of the reader to verify with the responsible agent that this is the most current version of the policy.
Thermal Management Flow Chart

Preoperative Patient Management
- Identify patient risk factors for hypothermia
- Measure patient's temperature on admission
- Determine patient's thermal comfort level (ask the patient if he/she is cold)
- Observe for signs/symptoms of hypothermia (shivering, piloerection, and/or cold extremities)

Patient Normothermic
- Institute preventative warming measures:
  - Passive insulation (apply warm cotton blankets, socks, head covering, and limit skin exposure)
  - Increase ambient room temperature (minimum 20°-24°C or 68°-75°F)

Patient Hypothermic
- Institute active warming measures:
  - Apply forced air warming system
  - Increase ambient room temperature (minimum 20°-24°C or 68°-75°F)

Intraoperative Patient Management

Assessment
- Identify patient risk factors for hypothermia
- Monitor patient's temperature (see guideline)
- Determine patient's thermal comfort level (ask patient if he/she is cold)
- Observe for signs/symptoms of hypothermia (shivering, piloerection, and/or cold extremities)

Interventions
- Passive insulation (apply warm cotton blankets, socks, head covering, and limit skin exposure)
- Increase ambient room temperature (minimum 20°-24°C or 68°-75°F)
- Institute active warming measures: apply forced air warming system
- Warm fluids: intravenous and irrigants
- Humidify and warm gases (anesthesia)

Expected Outcomes
- The patient's core temperature should be maintained at 36°C (96.8°F) or above during the intraoperative phase unless hypothermia is indicated
Postoperative Patient Management: Phase I PACU

Assessment
- Identify patient's risk factors for hypothermia
- Measure patient's temperature on admission
- Determine patient's thermal comfort level (ask patient if he/she is cold)
- Observe for signs/symptoms of hypothermia (shivering, piloerection, and/or cold extremities)

Patient Normothermic
- Institute preventative warming measures:
  - Passive Insulation (apply warm cotton blankets, socks, head covering, and limit skin exposure)
  - Increase ambient room temperature (minimum 20°-24°C or 68°-75°F)

Patient Hypothermic
- Institute active warming measures:
  - Apply forced air warming system
  - Passive Insulation (apply warm cotton blankets, socks, head covering, and limit skin exposure)
  - Increase ambient room temperature (minimum 20°-24°C or 68°-75°F)
  - Warm fluids; intravenous
  - Humidify and warm gases - oxygen
  - Monitor temperature every 30 minutes until normothermia is achieved

Expected Outcomes
- Patient's minimum temperature will be 36°C (96.8°F) prior to discharge from PACU
- Patient describes an acceptable level of warmth
- Signs/symptoms of hypothermia will be absent

Postoperative Patient Management: Phase II PACU (ASU)

Assessment
- Identify patient's risk factors for hypothermia
- Measure patient's temperature on admission
- Determine patient's thermal comfort level every 30 minutes (ask patient if he/she is cold)
- Observe for signs/symptoms of hypothermia (shivering, piloerection and/or cold extremities)

Patient Normothermic
- Institute preventative warming measures:
  - Passive Insulation (apply warm cotton blankets, socks, head covering, and limit skin exposure)
  - Increase ambient room temperature (minimum 20°-24°C or 68°-75°F)

Patient Hypothermic
- Institute active warming measures:
  - Apply forced air warming system
  - Apply passive insulation
  - Increase ambient room temperature (minimum 20°-24°C or 68°-75°F)

Expected Outcomes
- Patient's minimum temperature will be 36°C core prior to discharge from Phase II PACU (ASU)
- Patient describes an acceptable level of warmth
- Signs/symptoms of hypothermia will be absent
- Patient should describe methods of maintaining normothermia at home.
TEMPERATURE EQUIVALENCY CHART

Conversion Formulas

\[ F = C \times \frac{9}{5} + 32 \]
\[ C = F - 32 \times \frac{5}{9} \]

Core Temperature Measurement Sites – Pulmonary artery, Tympanic membrane*, Nasopharynx, and Esophagus.

Sites that Estimate Core Temperature – Oral, axillary, skin, bladder and rectum*.

*Rectal temperatures are equal to core temperature when the patient is normothermic. Rectal temperatures become unreliable measurement when temperature flux is anticipated. (29)

*Accuracy of tympanic temperatures can vary depending on the instrument, operator, and the patient.