Actively Pre-warming Surgical Patients to Prevent Inadvertent Hypothermia

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Previous Practice

- Prewarmed all surgical patients passively with a warm cotton blanket.
- Intra-operatively warmed high risk surgical patients with a warm forced-air blanket.

Problem

- 68% of high risk patients became hypothermic after 15 minutes of induction.
- Hypothermia leads to multiple complications:
  - Increased bleeding
  - Increased surgical site infections
  - Increased postoperative pain
  - Increased risk of cardiac arrhythmias
  - Delayed healing
  - Decreased metabolism of anesthetic drugs
  - Prolonged intubation time
  - Increased recovery room time
  - Increased healthcare cost
  - Decreased patient safety and clinical outcomes

Evidence

- Evidence from Literature Review: Actively Pre-warming with a forced-air warming system for at least 30 minutes is significantly more effective in keeping surgical patients normothermic and preventing hypothermia than passively pre-warming with a cotton blanket.

High Risk Factors

- Age: The elderly and pediatric patients
- Size: Thin patients
- Physical Status: Patient’s with pre-existing conditions.
- Length and Type of Surgery: Long, open cavity procedures.
- ERAS Patients: All GYN, GYO and Colorectal procedures.

Practice Change

- Baseline temperature on admission
- Actively pre-warming surgical patients, who are at high risk for inadvertent hypothermia, for at least 30 minutes with a forced-air warming system to preventing hypothermia throughout all phases of surgery

Implementation Development

- Create Pilot Committee: Multidisciplinary Team
- Literature Review: Determine evidence for best practice.
- Evaluation & Purchase: Forced-Air Warming System
- Create: Policy and Standard Work for actively pre-warming high risk surgical patients with warm-forced-air.
- Staff Education & In-serviceing: Inadvertent Hypothermia, high risk patients, policy, and standard work for pre-warming high risk surgical patients.
- Staff Training & Validations: Return demonstration and Validation Checklist for using forced-air system according to manufacturers instructions.
- Install: Forced-air warming units.
- Pilot Study: Implemented active pre-warming at one campus.
- Data collection and analysis: Positive results
- Disseminated Practice: Throughout Network in periop.

Results

- Prevented high risk patients from becoming hypothermic after 15 minutes of induction.
- Decreased postoperative complication resulting from inadvertent hypothermia.
- Increased patient comfort
- Increased patient satisfaction
- Increased patient’s clinical outcome, safety and quality of care
- Decreased healthcare cost

Challenge/Barriers

- Cost of forced-air unit and supplies
- Minimal barriers faced due to staff’s involvement in the process change and the simplicity of using the forced-air warming system.

References:


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