

Non-Invasive Core Temperature Monitoring System: Providing Consistent, Reliable Temperature Measurement in the Perianesthesia Patient

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Background Information: Maintaining normothermia (core body temperature 96.8° F to 100.4° F) is imperative in the perianesthesia patient. Anesthesia and environmental factors affect the patient's ability to regulate body temperature. An average adult's core body temperature may drop approximately 2.7° F (1.5° C) with general anesthesia. Undetected hypothermia in the perianesthesia setting can increase the incidence of surgical site infection, cardiac arrhythmias, blood loss, altered medication metabolism, pain perception, and increase length of recovery time and length of hospital stay.

One hospital in South Central Pennsylvania identified inconsistent temperature measurement practices throughout each phase of surgical care. Various forms of temperature measurements were used on the same patient (oral, rectal, temporal-artery, esophageal, pulmonary artery temperatures). Each of these techniques has varying reliability, which created variability and inconsistency in hypothermia treatment.

Objectives of Project: Develop a consistent technique for temperature measurement throughout the perioperative setting. Non-invasive core temperature monitoring is evidenced as a valid and reliable tool for perianesthesia patients.

Process of Implementation: Implemented a non-invasive core temperature monitoring system and educated all nursing and anesthesia staff members in the perianesthesia and perioperative settings.

Statement of Successful Practice: Non-invasive core temperature monitoring was utilized throughout all phases of surgical patient care. Initial data shows undetected hypothermia as a significant problem previously undetected with less reliable, inconsistently used measures. Heightened awareness among staff has increased active warming measures in the Post Anesthesia Care Unit prior to discharge.

Implications for Advancing the Practice of Perianesthesia Nursing: Early identification and intervention for hypothermia is imperative for improved outcomes with the surgical patient. The literature lacks recommendations for a standard length of time for temperature monitoring after normothermia returns and active warming has ceased. This project has stimulated an interest in a multidisciplinary original research project regarding thermoregulation after anesthesia and the reoccurrence of hypothermia after active warming measures have ceased.