

Effect of Prewarming on Inadvertent Hypothermia and Thermal Comfort

Primary Investigators: Kathryn Mercado BSN RN, Denise Rainier RN MBA BSN
MemorialCare Long Beach Medical Center, Long Beach, California

Co-Investigators: Adrianna Medina RN CNOR, Marci Trump MSN RN CNOR,
Janeen Lozada BSN RN CPAN, Peggy Kalowes PhD RN CNS FAHA

Introduction: Inadvertent perioperative hypothermia (IPH), where core body temperature is less than 36°C or 96.8°F, occurs in 26-90% of patients undergoing elective surgery. This preventable anesthesia- and surgery-related complication affects patients' outcome and is associated with increased risk for surgical site infections (SSIs), bleeding, blood transfusions, and decreased patient thermal comfort.

Identification of the problem: Even mild IPH can cause significant patient complications, increasing health care costs postoperatively (PO).

EBP Question/Purpose: In colorectal/ orthopedic surgical patients, does preoperative warming with a forced-air warming (FAW) gown, effect occurrences of IPH, reducing PO SSIs and blood transfusions, while improving patient thermal comfort and anxiety?

Methods/Evidence: Deming's PDSA Cycle (Plan-Do-Study-Act) model was used to guide our project. A FAW gown was initiated pre-operatively for 30-minutes and continued intra- and post-operatively. Baseline and post-intervention data were obtained regarding SSI and blood transfusion rates, as well as nurses' knowledge of peri-operative patient warming and the impact on patient outcomes. Patients' perception of 'Thermal Comfort' and Anxiety during their perioperative experience was measured using the Thermal Comfort Inventory (TCI) Scale, which used a Likert scale to measure the patients' thermal comfort and anxiety, and a Numeric Visual Analog Scale (NVAS) was used to rate overall thermal comfort. Staff were educated related to the project and protocol, as well as through staff huddles and peer-to-peer interactions in each perioperative area. A brochure about the warming gowns was developed to give patients and family members.

Significance of Findings/Outcomes: Our study results aligned with previous research outlining the benefits of preoperative warming. Comparing pre- to 30-day post-warming data, there was a decrease by 26% of SSIs, as well as a 49% reduction in blood transfusions among high-risk surgical patients (spinal, colorectal, and total joint patients). TCI questions related to temperature showed a slight increase in thermal comfort and decrease in anxiety. The NVAS Pre/ Post FAW showed an 8% increase in overall thermal warmth, and a correlation between patient satisfaction and level of warmth.

Implications for perianesthesia nurses and future research: Hospitals can provide safer care for surgical patients by adhering to AORN and ASPANs EBGs regarding perioperative warming to prevent IPH and its negative outcomes.