

ABSTRACT

Temperature management in the perioperative setting is vital in the outcomes of adult surgical patients. Research indicates that a patient's temperature is the least managed vital sign in the perioperative setting and is related to complications of patient outcomes. This project offers a plan to educate nurses on the importance of temperature management. A temperature protocol plan will be implemented to more closely manage perioperative temperatures. The evidence-based information regarding temperature management validates the importance of implementing a temperature maintenance protocol that will improve patient safety and reduce postoperative complications.

PICO QUESTION

In adult surgical patients, how does maintaining normothermic temperature immediately postoperative compared to hypothermic temperature immediately postoperative affect surgical complications over a period of one-month time?

LITERATURE REVIEW

Hypothermia is a common finding in surgical patients, occurring in 40% of trauma patients, a preventable surgical morbidity source (1, 2).

- Threefold increase of mortality (3).
- Blood loss from hypothermia-induced clotting, which increases the need for blood transfusions (4).
- A temperature drop of 1.6 degrees Celsius can increase blood loss by 500 ml (5).
- Tissue hypoxia and immune system impairment are hypothermia outcomes that lead to infection (3, 5).
- Infection rate over one-months time postoperatively ($p=0.03$) was increased in hypothermic patients (6).
- 221% more likely to have a surgical site infection (7).



Perioperative Temperature Management

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PROJECT METHODOLOGY

Healthcare providers have the responsibility to ensure quality care to patients. One way to continue improving care to patients involves a continual evaluation of practice and providing adjustments in current practice as needed.

A lack of nursing education exists of temperature management in the perioperative setting. Providing nurses with evidence-based research allows them to understand limitations and improve their practice. This MSN project aims to decrease complications of patient outcomes by educating perioperative nurses and implementing a temperature management protocol. The protocol should specifically outline how the perioperative nurse should obtain and monitor patient temperatures and when to intervene if necessary. Providing evidence-based education to the staff regarding temperature maintenance will close the gap in care.

Plan and Development

Education provided including a handout given to staff with feedback encouraged

- Warming techniques will be discussed, including the use of warmed fluids, blankets, and the Bair Hugger.

The leadership team will nominate a change leader who will be encouraged to provide feedback regarding how the process is going, including barriers that have evolved and advancements in practice.

When a patient arrives in recovery, airway management and vital signs are obtained.

- If a patient's temperature is 36 degrees Celsius or below, staff should begin warming protocols, including warmed fluids, warm blankets, and the use of a Bair Hugger. The hypothermic patient's temperature should then be evaluated every 15 minutes while the patient is in recovery until the patient reaches a temperature greater than 36 degrees Celsius.
- If the patient's temperature is 36 degrees or above, no further temperature checks are required.

After the patient leaves the surgical center, the patient's MRN will be forwarded to the Quality RN for follow-up care

- Phone calls to the patient over the next 30 days to track any complications

Evaluation

The Quality RN will ask questions to staff during the implementation process to ensure knowledge and application of the protocol.

- The Quality RN will complete several chart audits throughout the month to determine if patient temperatures were documented, if the protocol was initiated, and if the information was forwarded to the Quality RN.
- Staff survey results sent out via email will be evaluated. Trends will be identified and presented to the leadership team at the end of the process.
- Frequent feedback from staff should be evaluated, and adjustments regarding the program can be implemented as needed for the unit.



THEORETICAL FRAMEWORK

The John's Hopkins Evidence Based Practice (JHEBP) nursing model creates an environment where nurses can promote learning and translate the evidence of the best practices and use them within their nursing career. The JHEBP nursing model applies to all nursing levels, including clinical, educational, and operational (8).

Process Evidence Translation (PET)

- Process phase evaluates clinical question
- Evidence phase uses nursing knowledge and skills to assess quality of research
- Translation phase incorporates knowledge into practice
- Autonomy and self-governance is promoted

CONCLUSIONS

Hypothermic temperatures in patients perioperatively account for increased risk of complications, including infection, blood transfusions, and mortality (5, 9, 10). To decrease the risk of these complications from occurring, a protocol needs to be in place that outlines the close management of patient's temperatures perioperatively. The protocol should specifically outline how the perioperative nurse should obtain and monitor patient temperatures and when to intervene if necessary. In addition to process improvements, the project offers cost-effectiveness by decreasing the costs associated with patient complications.

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