



# Anesthesia Providers' Perceptions of Perioperative Temperature Monitoring: A DNP Project

Zachary Soderblom, BSN, SRNA

Maura McAuliffe, PhD, CRNA, FAAN, Project Chair

Nurse Anesthesia Program  
College of Nursing, East Carolina University  
Greenville, North Carolina 27858  
soderblomz20@students.ecu.edu

## INTRODUCTION

- Perioperative temperature monitoring is an understudied phenomenon
- Inadvertent perioperative hypothermia (IPH) is defined as a temperature less than 36° Celsius and contributes to increased operative blood loss, postoperative wound infections, hospital length of stay and hospital costs<sup>1</sup>
- Volatile anesthetics, inhaled anesthetics, intravenous anesthetics, and opioids administered during anesthesia can alter thermoregulatory control and reduce blood vessel constriction<sup>2</sup>
- These alterations have a compounding effect on patients' ability to maintain thermoregulation, thus accurate temperature monitoring is essential to mitigate the adverse effects
- The purpose of this quality improvement project was to assess anesthesia providers' perceptions of the effectiveness of their current practice for intraoperative temperature monitoring and of a newly developed intraoperative temperature monitoring and management resource

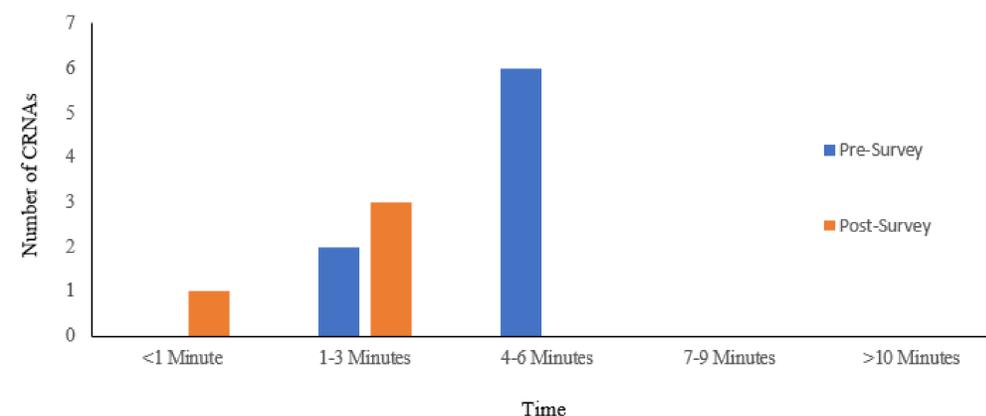
## METHODS

- This pilot project consisted of a single Plan Do Study Act (PDSA) cycle
- A newly created evidence-based practice tool was introduced to participants
- Data was gathered using pre- and post-surveys created and administered via Qualtrics survey software
- Surveys were designed to collect a range of data categorized in various responses to include ordinal, interval, and open-ended responses
- Participants' current temperature monitoring practices were assessed as a baseline
- CRNAs were asked to complete surveys both before and after using the educational resource for two weeks in their clinical practice
- Data was analyzed using Microsoft Excel

## RESULTS

Figure 1

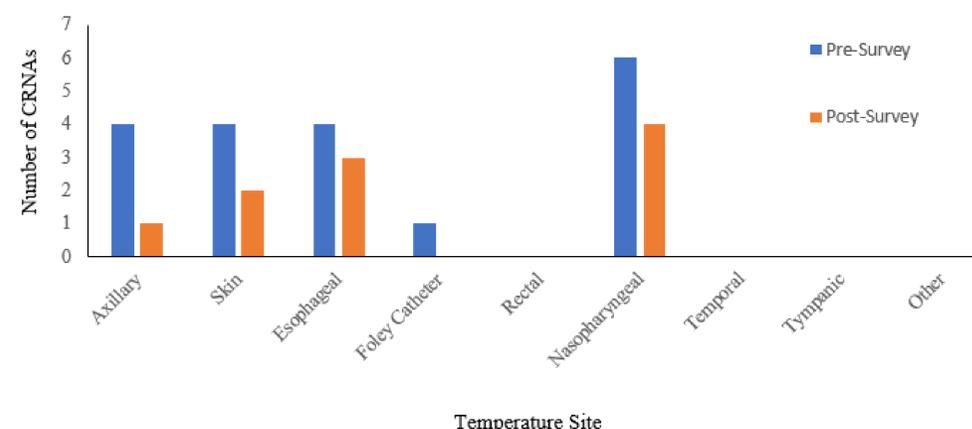
Time Required to Access Temperature Monitoring Reference Material



Note. Comparison of time it takes to access reference material before educational tool and time it takes to access the educational tool if saved to a smartphone or personal electronic device. Pre-survey responses n=8. Post-survey responses n=5.

Figure 2

Comparison of Preferred Modality or Site for Temperature Monitoring



Note. Multiple responses were allowed. Pre-survey responses n=8. Post-survey responses n=5.

## DISCUSSION

- Participants temperature modality preferences changed after educational resource was implemented
- Participants did not indicate a preference for using rectal, temporal, or tympanic monitoring either before or after the resource was provided
- All participants were able to readily access AANA standards on temperature monitoring after reviewing the educational resource
- Most participants reported they are unlikely to use the educational resource in the future
- Utilization of the educational resource when saved to a smartphone may decrease time to access important information making it useful as a resource

## CONCLUSIONS

- Limitations of this project includes small sample size and differing number of returns of pre- and post-implementation surveys
- Qualtrics survey simplified data collection but also made accessing data to analyze and use in tables and charts more challenging
- Implementation time of only two weeks may not have been sufficient to allow participants time to use the educational resource and see the benefits of its use
- Recommendation for future projects include increasing the number of participants and duration of data collection to improve the usefulness of data to leadership for possible use in developments of department policies

## REFERENCES

1. John, M., Crook, D., Dasari, K., Eljelani, F., El-Haboby, A., & Harper, C. M. (2016). Comparison of resistive heating and forced-air warming to prevent inadvertent perioperative hypothermia. *British Journal of Anaesthesia*, 116(2), 249-254. <https://doi.org/10.1093/bja/aev412>
2. Sessler, D. I. (2016). Perioperative thermoregulation and heat balance. *The Lancet*, 387(10038), 2655-2664. [https://doi.org/10.1016/S0140-6736\(15\)00981-2](https://doi.org/10.1016/S0140-6736(15)00981-2)