



DNP Project: Perioperative Temperature Monitoring

Garrett Reinhard, BSN, SRNA

Maura McAuliffe, PhD, CRNA, FAAN, Project Chair

Nurse Anesthesia Program
College of Nursing, East Carolina University
Greenville, North Carolina 27858
Reinhardg12@students.ecu.edu

INTRODUCTION

Inadvertent perioperative hypothermia, or IPH, is defined as a core body temperature less than 36° C¹

- IPH contributes to many documented adverse outcomes including but not limited to increased perioperative infections and blood loss, increased extubation times, and increased morbidity/mortality¹.
- Active and accurate monitoring is necessary in preventing or limiting adverse effects related to perioperative hypothermia.
- Accurate monitoring should be a widespread and accepted standard of care amongst anesthesia providers.
- American Association of Nurse Anesthetists (AANA) and the American Society of Anesthesiologist (ASA) include temperature monitoring as a part of the monitoring standards for anesthesia providers^{2,3}.

METHODS

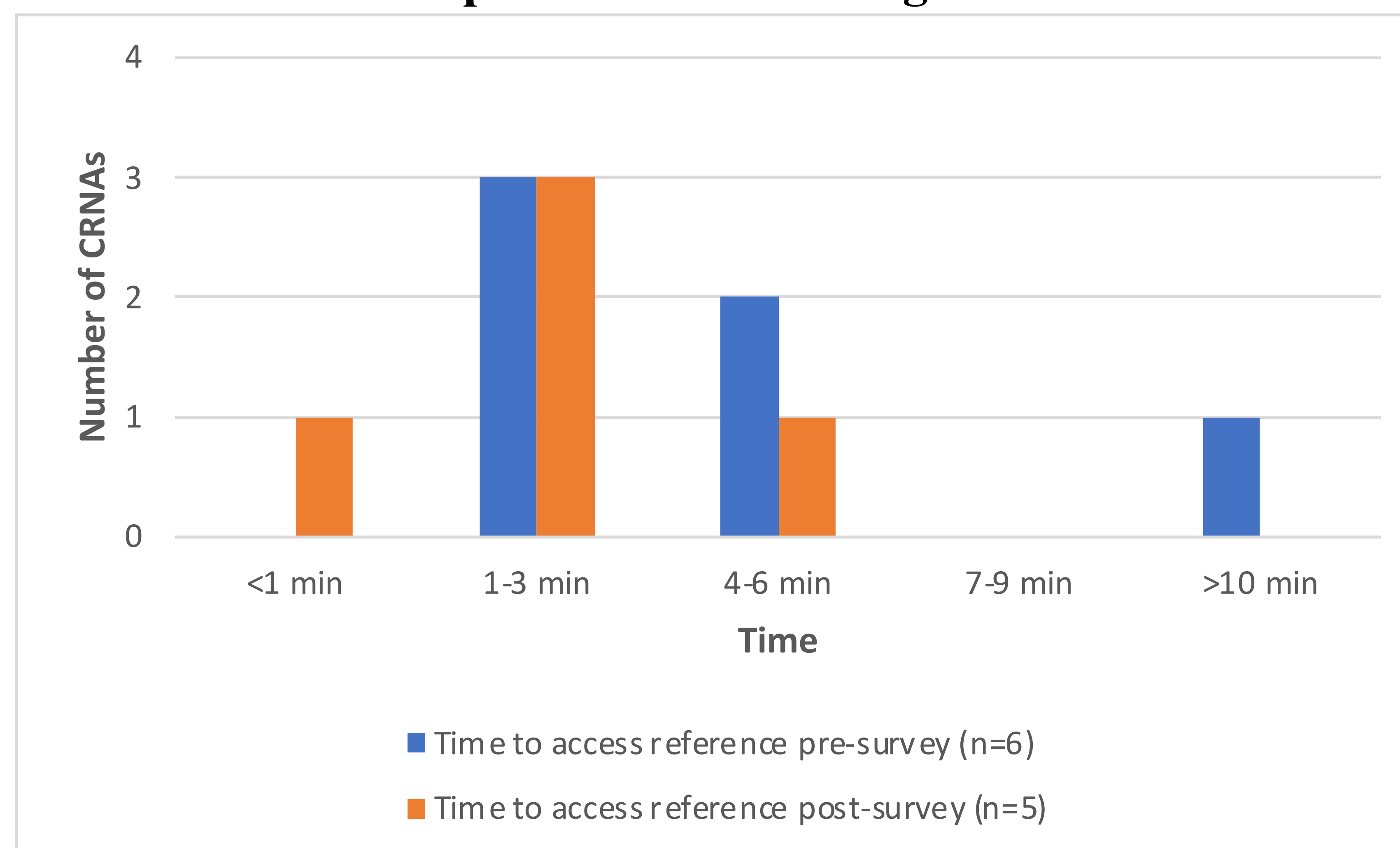
- Pre- and post-intervention surveys were used to complete a single PDSA quality improvement cycle.⁴
- Six CRNA participants completed a pre-implementation survey via Qualtrics.
- Educational resource tool was then provided for reference for the following two-week period.
- After the two-week period, five participants completed a post-implementation survey via Qualtrics.
- During the two weeks of educational resource tool use, CRNAs were able to contact the team lead via email for any clarification if needed.
- The resulting data was analyzed by comparing knowledge and perceptions gathered from participants before and after the educational resource tool was provided.

PURPOSE

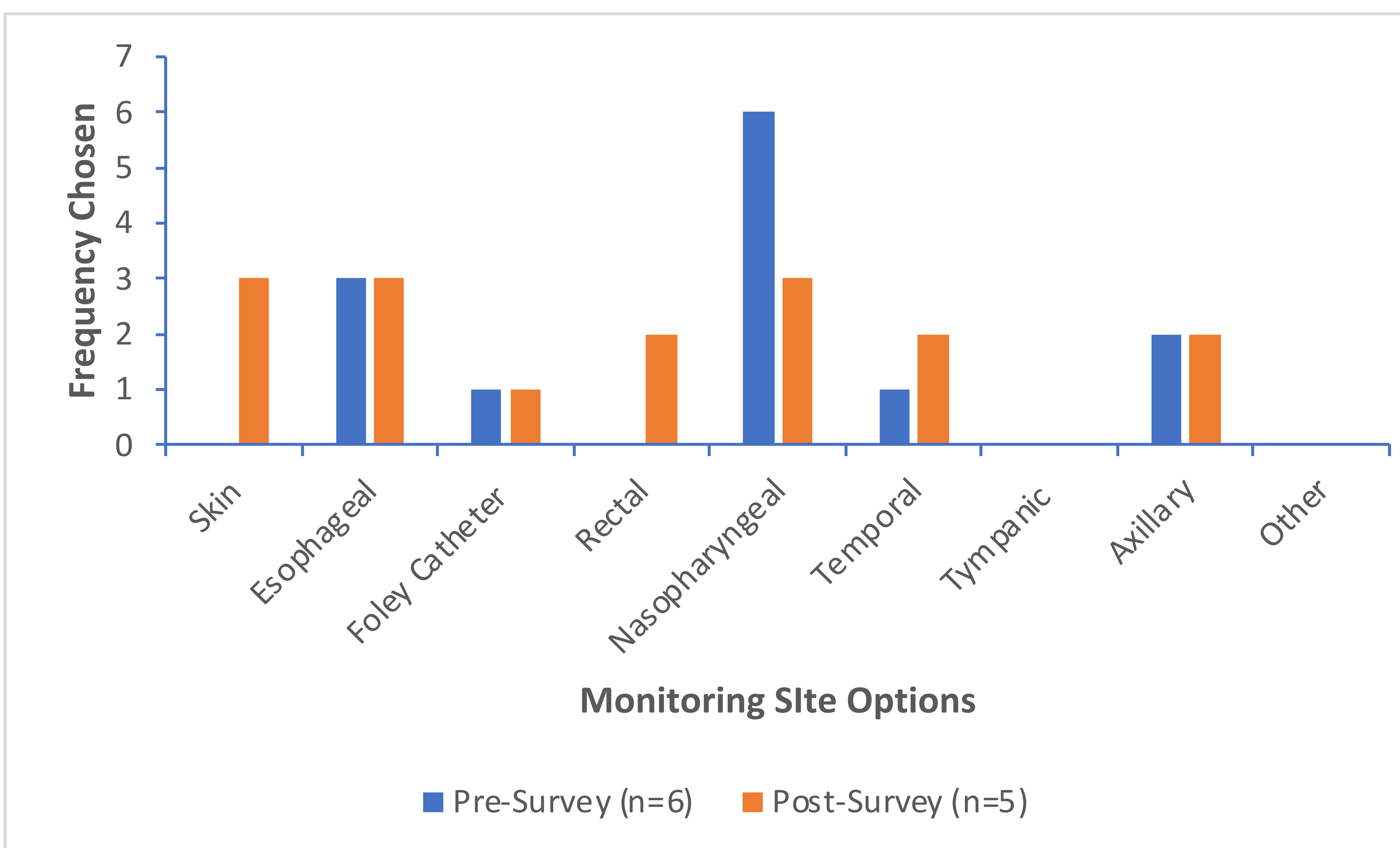
The purpose of this project was to assess anesthesia providers' perceptions of the effectiveness of their current practice for perioperative temperature monitoring and the effectiveness of the newly develop perioperative temperature monitoring educational resource tool.

RESULTS

Time to Access Temperature Monitoring Reference



Preferred Temperature Monitoring Modality/Site



DISCUSSION

- Pre- and post-surveys demonstrated high confidence levels among participants about their perioperative temperature monitoring knowledge, ability to identify patient or procedure at high risk of perioperative heat loss, and ability to identify core body temperature sites.
- All participants reported awareness of national monitoring standards regarding perioperative temperature monitoring.
- There was a perceived reduced time to access educational resource in post-survey responses in comparison to perceived higher times reported to access another evidence-based resource.
- There was a mixture of preferred modality of temperature monitoring sites with nasopharyngeal being most frequently cited in both pre/post-survey, however, there was a reduction in nasopharyngeal preference in post-survey responses.
- Limitations of the project included small sample size, limited time frame, and the lack of one post survey response.

CONCLUSIONS

- National AANA monitoring standards are well known by CRNAs
- CRNAs have high confidence in knowledge regarding perioperative heat loss, patients or procedures at risk, and core body temperature sites
- Educational resource reduced time to access evidence-based reference on perioperative temperature monitoring
- Nasopharyngeal temperature monitoring (not a core temperature monitoring site) frequently reported as a preferred site
- Future QI projects have potential to build on this knowledge, explore limitations, barriers, and influences to using core temperature monitoring sites.

REFERENCES

1. Riley, C., & Andrzejowski, J. (2018). Inadvertent perioperative hypothermia. *BJA Education*, 18(8), 227-233. <https://doi.org/10.1016/j.bjae.2018.05.003>
2. American Association of Nurse Anesthetists. (2021, February 19). Standards for nurse anesthesia practice. https://www.aana.com/docs/default-source/practice-aana-com-web-documents/all/professional-practice-manual/standards-for-nurse-anesthesia-practice.pdf?sfvrsn=e00049b1_20
3. American Society of Anesthesiologist. (2021). Standards for basic anesthetic monitoring. <https://www.asahq.org/standards-and-guidelines/standards-for-basic-anesthetic-monitoring>
4. Institute for Healthcare Improvement. (2021) *How to improve*. <http://www.ihl.org/resources/Pages/HowtoImprove/default.aspx>
5. Rauch, S., Miller, C., Bräuer, A., Wallner, B., Bock, M., & Paal, P. (2021). Perioperative hypothermia-A narrative review. *International Journal of Environmental Research and Public Health*, 18(16), 8749. <https://doi.org/10.3390/ijerph18168749>