UNIVERSITY OF MIAMI
SCHOOL of NURSING & HEALTH STUDIES

PREVENTION OF UNPLANNED INTRAOPERATIVE HYPOTHERMIA

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INTRODUCTION

- Hypothermia is defined as a core body temperature 36.0 °C.[1,2]
- Hypothermia occurs in 50-70% of patients undergoing general anesthesia.[3,4]
- Hypothermia can lead to impaired wound healing, increased surgical site infections, delayed recovery, coagulopathies, impaired metabolism.[1-3,5]
- Hypothermia develops in 65% of patients within the first hour of anesthesia.[8-10]

OVERARCHING GOAL

Decrease the incidence of unplanned hypothermia during the surgical experience.

OBJECTIVES

1. Identify the barriers in usage of available forced air warming devices.
2. Improve the overall staff knowledge of the benefits of prewarming in the preoperative period.
3. Increase overall utilization of forced air warming devices per NICE, AORN and CMS guidelines.

Background

- Anesthesia causes a decrease in shivering and vasodilation thus impairing thermoregulation.[6]
- Induction of anesthesia causes a temperature decline of 1.6 °C.[8-10]
- Metabolic rates decrease by 15-40% during anesthesia.[1,7]
- Just 30 minutes of active prewarming with forced air warming devices in the preoperative period can prevent intraoperative unplanned hypothermia.[5,11-18]

METHODOLOGY

Design: Quality improvement

Setting: Surgical department at an academically affiliated community hospital

Activities: problem identified, barriers for use of available equipment assessed, educational sessions conducted, and evaluation of intervention effectiveness evaluated with patients charts and knowledge surveys

Data collection: Body temperatures of patients 18 years and older, undergoing general anesthesia longer than 1 hour

Implementation: Educational session and staff surveys

RESULTS

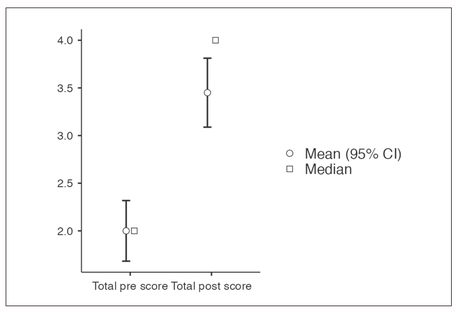
Knowledge

Paired Samples T-Test

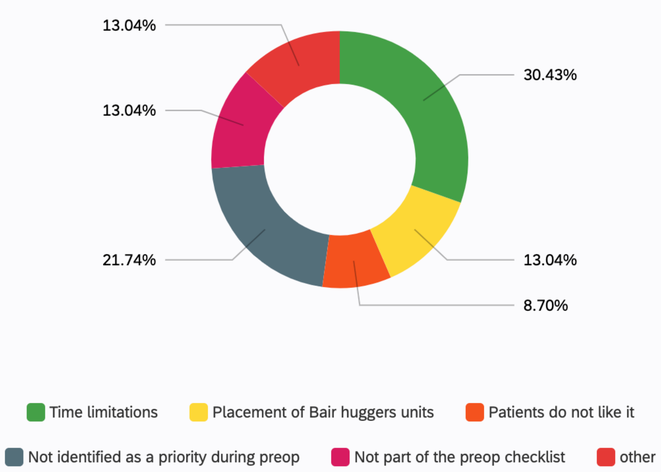
Paired Samples T-Test

			Statistic	p
Total pre score	Total post score	Wilcoxon W	5.50 [a]	<.001

[a] 2 pair(s) of values were tied



Barriers



Incidence

Descriptives

	Implementation	Duration of procedure (min)	Duration of temperature < 35.5 (min)
N	Pre	40	18
	Post	40	12
Mean	Pre	121	70.3
	Post	126	56.3
Median	Pre	105	70.0
	Post	120	42.5
Minimum	Pre	60	10
	Post	65	10
Maximum	Pre	270	160
	Post	240	210

Independent Samples T-Test

Independent Samples T-Test

		Statistic	p
Duration of temperature < 35.5 (min)	Mann-Whitney U	74.5	0.161

CONCLUSION

- There was a notable decrease in the incidence of unplanned intraoperative hypothermia cases after successful implementation of this project.
- Most common barriers identified by staff included hypothermia prevention not seen as priority and time limitations.
- Staff knowledge was significantly increased following the educational session provided.

Implications

- Unplanned hypothermia can negatively impact patient's surgical outcomes.
- Active preoperative warming can significantly prevent hypothermia episodes.
- Active warming should be included in the preoperative phase for all patients undergoing general anesthesia for longer than one hour.

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REFERENCES/IRB exemption