Prevention of Intraoperative Hypothermia

Perseus Missirlis MSc MD, Gilliam Foster RN, Sharon Yio

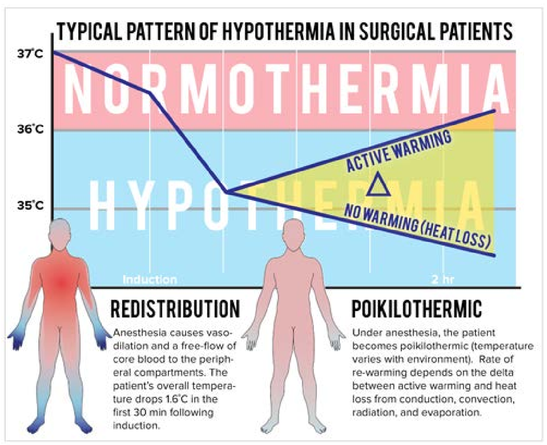
Aim

Increase the proportion of patients under general or spinal anesthesia for over one hour that are normothermic (≥ 36.0℃) upon discharge from the OR at Eagle Ridge Hospital by January 2020 to > 80%.

Background

Perioperative hypothermia can cause:

- delayed recovery
- prolonged drug effects
- increased transfusion rate
- increased surgical site infections (SSIs)
- cardiac complications (MINS)
- poor quality of recovery (shivering and increased pain)
- length of hospital stay
- Intra-operative hypothermia is expected without active warming



Modified and image credit from www.hotdogwarming.com

Project Design & Strategy

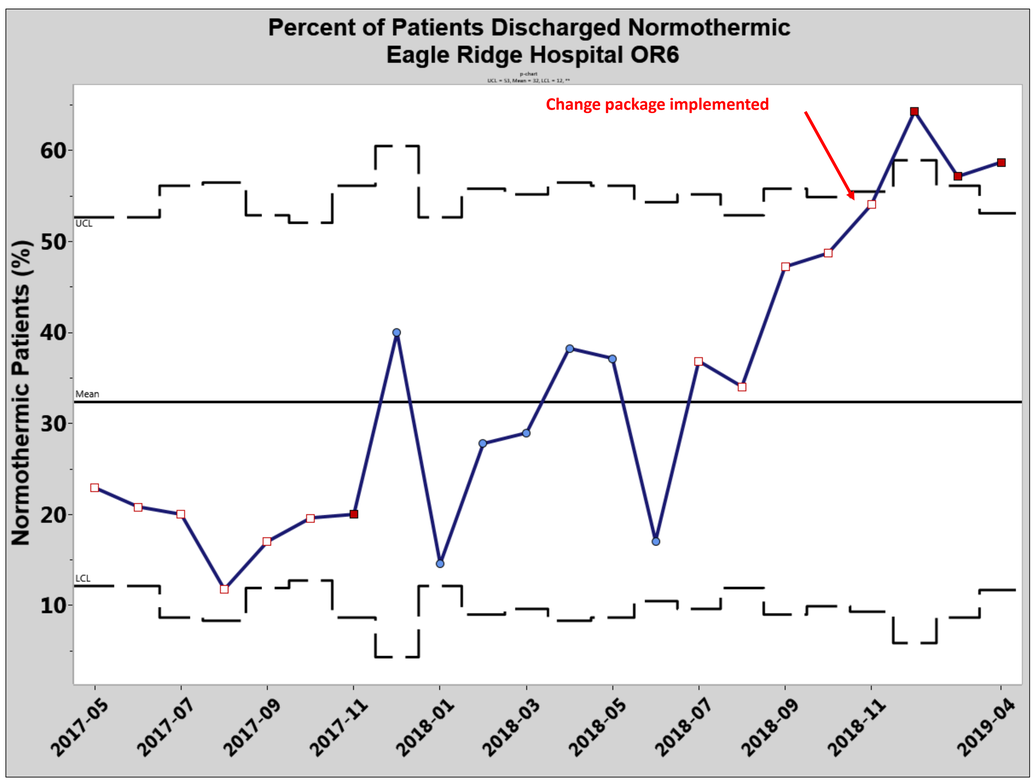
- ID patients booked for ≥ 90 minutes on OR slate
- Institute change package (see Changes Made below)
- Potentially implement reminder within software after 1 hr
- If unanticipated long case institute warming blanket and temp probe at this point
- **Outcome measure:** % normothermic patients
- **Process measures:** % measured temperatures, % warmed
- **Balancing measure:** mean time to surgical incision (minutes)

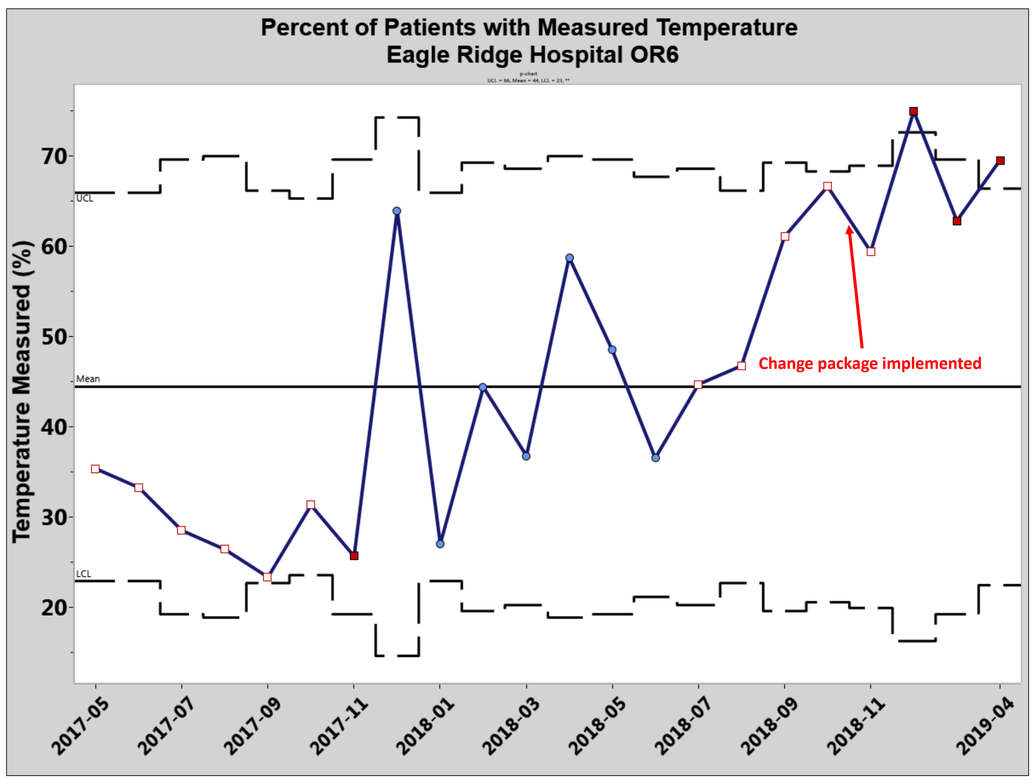
Changes Made

- Institute flex gown and pre-warming in pre-op area
- Place temperature dot on patient's forehead as physical reminder
- Added Y-Adaptor so that either esophageal or skin temperature will be recorded in the database from the anesthesia machine

Results

- **Primary outcome measure** was the percent of patients with exit temperatures ≥36℃ which increased significantly from mean of 33% to ~55%.
- **Process measures** were percent of patients with any temperature measured (increased from mean of 44% to ~65%) and percent with warming documented (upward trend but not significant).
- **Balancing measure** was time to surgical incision to assess if change package delayed surgical start (no change noted).





Lessons Learned

- Access to high quality data greatly facilitates QI projects
- Learn from other high-performing areas (i.e. ERAS protocol in RCH OR 5)
- A strong team is essential for implementation

Next Steps

Our team will continue to roll out this change package to other operating rooms at Eagle Ridge Hospital and Royal Columbian Hospital and observe if the same change is demonstrated.

Team

Perseus Missirlis, MSc, MD (perseus.missirlis@fraserhealth.ca)
Gillian Foster, RN (gillian.foster@fraserhealth.ca)
Sharon Yio, FHA Data Analyst (suat.yio@fraserhealth.ca)