# Decreasing Perioperative-Acquired Pressure Injuries (POPIs) in Cardiothoracic Surgery Patients Using a Static Air Overlay on OR Surface

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Baylor Scott & White The Heart Hospital Plano — Joint ownership with physicians

MAGNET RECOGNIZED — American Nurses Credentialing Center

## INTRODUCTION

- POPIs are pressure injuries that occur in tissues that are under pressure during a surgical procedure and that are identified immediately after surgery or up to five days post-operatively.
- Cardiovascular surgery patients can have POPI incidence rates as high as 29%.
- Cardiothoracic surgery patients are at increased risk for POPIs due to immobility, temperature manipulation, lowered blood pressures, administration of vasoactive drugs, reduced hemoglobin and hematocrit and decreased ability to feel pain.
- At our cardiovascular procedural-based hospital, we had an increase in POPIs from FY 2019 to FY 2020.
- POPIs accounted for 33% of our total HAPIs.

## OBJECTIVES

- To decrease the incidence of POPIs in cardiothoracic surgery patients with procedures greater than three hours by using a non-powered reactive air support overlay on surgical tables.
- To create an interdisciplinary team approach to improve pressure injury identification and early implementation of pressure injury prevention in cardiothoracic surgery post-op patients.

## METHODS

- The Plan, Do, Check, Act method was used for this quality improvement project.

## STOP THE PRESSURE DOOR SIGNS


## P-D-C-A

### Existing Practices

- 4" mattress
- Five-layer foam dressing applied to sacrum & heels
- Gel pad (bed-length)

### POPI Data Review

- Mean duration of surgery: 439 minutes
- POPIs identified on: POD #2.2
- Locations: coccyx/buttocks: 74%; heels: 21%

### Pressure Mapping

- Various positions pressure mapped
- Pressure measured at 15 minutes

### Identify Best Practices

- NPIAP & AORN
- Literature review

### Identify Product to Trial

- Full length static air overlay
- $49.42 for single pad

### Present Proposal

- Surgical Services Leadership Team
- Procedures planned for ≥ 180 minutes
- 24 patients OR 30 days
- Single surgeon chosen & all current in-patients

### Educate Health Care Team

- Pressure injury skin & risk assessments
- Proper usage of static air overlay
- Collaborative care
- Door signs for POPI risk patients

### Conduct 2-week Trial

- 1/14/2021 - 1/28/2021

### Trial Results

- n = 24 patients in trial
- POPIs: 0

### Validation of Trial Results

- Continued data collection

### Results Presented

- Surgical Services Leadership Team
- All cardiac procedures ≥ 180 minutes
- Practice change proposed - **APPROVED**

### Practice Change Executed

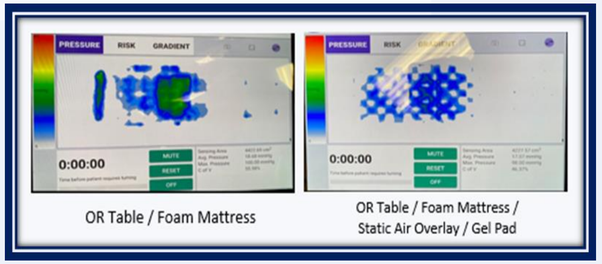
- Continuous education for Health Care Team
- Expand "Stop the Pressure" door signs to identify all HAPI risk patients

### On-going Data Collection

- 8/16/2021 - 12/31/2021
- 3 POPIs since 7/1/2021 (not on overlays due to supply chain issues)

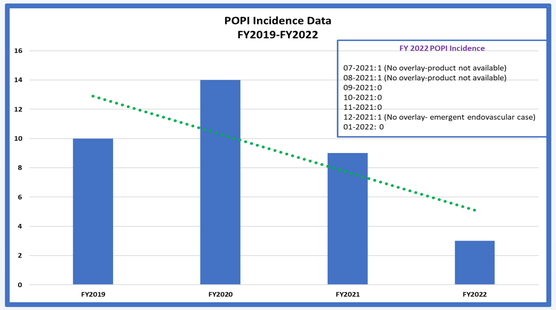
### Next Steps

- Routine inspection of OR surfaces
- Expand usage of overlay at other BSWH facilities
- Continued focus on POPI identification and prevention




## RESULTS

- 24 patients participated in the trial
  - 2 patients excluded from data analysis due to surgery times <3 hours
- 22 patients followed post-op day 0 to post-op day 5
- 0 trial patients developed a POPI or HAPI
- Practice change proposed, approved, and implemented for planned cardiothoracic surgeries ≥ 3 hours




## CONCLUSIONS

- The use of the static air overlay during prolonged surgical procedures combined with increased staff awareness of patients' risks for POPIs, and the consistent implementation of pressure injury prevention interventions can significantly reduce the incidence of POPIs.

## REFERENCES

SCAN ME

## CONTACT INFORMATION

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