

Children's Health Medical Center Dallas

Children's Health Scholarly Collection

2023

Annual Nursing Fair

2023

Sustained Reduction of Pressure Injury in the Pediatric Cardiac OR

Meagan Lombardo
Childrens Health

Andrea Torzone
Childrens Health

Follow this and additional works at: <https://scholarlycollection.childrens.com/nursing-anf2023>

Recommended Citation

Lombardo, Meagan and Torzone, Andrea, "Sustained Reduction of Pressure Injury in the Pediatric Cardiac OR" (2023). 2023. 28.

<https://scholarlycollection.childrens.com/nursing-anf2023/28>

This Book is brought to you for free and open access by the Annual Nursing Fair at Children's Health Scholarly Collection. It has been accepted for inclusion in 2023 by an authorized administrator of Children's Health Scholarly Collection. For more information, please contact amy.six-means@childrens.com.

Background

- Pediatric cardiac surgery patients have multiple risk factors for developing hospital-acquired pressure injury (HAPI) including an extended immobile time, multiple monitoring devices, and altered hemodynamics related to cardiopulmonary bypass, hypothermia, chronic hypoxia, and compromised tissue perfusion.
- In 2018, three serious harm pressure injuries were related to cardiac surgical procedures at our organization.
- These patients experienced significant consequences including pain, additional surgical procedures, anesthetic exposures, and extended length of stay.
- Limited evidence exists to guide practice for HAPI prevention in the pediatric cardiothoracic perioperative area.

Goal

- To prevent HAPI related to the cardiac operating room (CVOR) by standardizing maximum skin protective strategies.

Interventions

- Collaboratively, a senior CVOR nurse and the Cardiac ICU Clinical Nurse Specialist partnered to lead a quality improvement initiative for HAPI prevention in the CVOR.
- Serious harm HAPI events were reviewed to identify risk factors.
- Local practice was evaluated and compared to evidence-based AORN recommendations.
- A key driver diagram was used to guide interventions.
- Sacral dressings were trialed in collaboration with the wound care team.
- The Perioperative Skin Protection Guide was created.
- Focus areas include assessment, positioning, pressure-point padding, and surfaces
- A reference was created for operating room staff to standardize and reinforce optimal positioning and skin protection.
- A novel alternating-pressure overlay (Dabir Micropressure Surgical Surface), which provides pressure-redistribution during surgical procedures, was trialed and adopted for every patient > 7kg.



Courtesy of Dabir Surfaces

Results

- Despite a decrease in total cases during the COVID-19 pandemic, acuity and time in OR remained consistent with pre-pandemic numbers.
- There have been no serious-harm HAPI attributed to the CVOR since March 2018, representing 63 consecutive months without harm.
- This represents 2,509 consecutive cardiac surgical cases without a pressure injury through May 2023.

Conclusion & Next Steps

- Our guideline elements are utilized for every patient, regardless of projected case duration, as we believe that every cardiac surgical case poses risk for skin injury.
- The nurse champion's consistent presence in the CVOR role models best practice and provides ongoing education and reinforcement.
- To sustain our results, next steps include ongoing staff education, implementing gel positioners in the CVOR, and reinforcement with anesthesia providers regarding appropriate fluidized positioner use.
- Use of the Dabir alternating-pressure overlay has spread to CICU and PICU for high-risk patients including ECMO and those intolerant to repositioning.

Positioning Overview

Full head to toe skin assessment:

- In CPPI pre and post procedure
- Pre-op skin assessment documented under "Pre-Op Checklist"
- Post-op skin assessment documented under "Post-Op Assessment"
- Nurse's note documented if there is a skin integrity issue

In OR pre and post surgery (Pre-op skin and Post-op)

- Pre-op skin assessment documented under "Pre-Op Skin" in intraoperative record
- Post-op skin assessment documented under "Post-Op Skin" in intraoperative record

Dabir alternating pressure overlay:

- Use for all patients > 7kg
- Document in "Patient Position"
- Settings:

Layers:

- OR Table
- Blanketrol
- Dabir Surface
- Bedding (Blue/White Cover)
- Draw Sheet
- Bar Hugger

Sacral foam dressing:

- Use for patients > 4 years or at RN discretion

Supine positioning key points:

- Foam pillow or z-flo positioner under head
- Shoulder roll
- Foam or gauze padding under arms and legs
- Secure arms to table with draw sheet
- Blue foam or Heelmedix boots for larger patients/extended cases
- Pillow under knees. Flatter pillow is preferred because it will not increase pressure to sacrum.
- Age > 10 years: safety strap across patient's lower legs

Thoracotomy positioning key points:

- Roll towel/positioner under the axilla which is against the table
- Roll towel/positioner along abdomen and back to maintain position
- Apply "sacral" foam dressing on greater trochanter (hip) which is against the table - RN discretion based on patient size/age
- Place foam, gauze, and/or folded towels or blankets between patient's arms to maintain position and provide padding. Arms may need to be taped to secure position.
- Place gauze across patient's shoulder and hip prior to using tape.

Pressure-Point Specific Skin Protection

Occiput:

- Blue foam pillow or z-flo
- Molding info
- Create "crater" for occiput
- Mold around head and under neck/shoulders
- Re-mold every 2 hours
- Ensure no wires/tubes under head

Scapulae:

- Shoulder roll under shoulders
- Ensure no wires/tubes between shoulder roll and patient

Elbows:

- Gauze or foam padding under elbow/arm
- Ensure gauze under all wires/tubes against skin

Heels and feet:

- Offload heels (pillow under knees and calf, blue foam or Heelmedix boots, or layer of gauze or foam for small patients)
- May need additional layer of foam under ankles to properly offload heels
- Ensure lateral aspects of feet are offloaded and will not lay on table
- Add foam to lateral or medial sides of feet to support neutral position.

Arterial line:

- Pay special attention to stopcock padding
- Make sure padding is not only under, but also around the stopcock so it does not dig into the patient's arm or side during surgery

PIV:

- Pay attention to hubs, connectors, etc.
- Make sure these areas have extra padding

Urinary catheter:

- Hub has been covered with gauze to provide padding. Foam is another form of appropriate padding.
- Hub and tubing are covered by the pillow.

