

Revalidation of the Acero-Kurtz perioperative skin bundle

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Significance

The Operating Room (OR) is a high-risk environment for hospital-acquired pressure injuries (HAPI) due to a number of factors including:

- Operative time and prolonged immobility
- Inability to perceive pain or discomfort from unrelieved pressure
- Friction and sheering forces
- Relatively hard support surfaces^{1,2}

In 2019, 38% of all HAPI at a 500+ bed teaching hospital were contributed to the OR. The Prevention and Treatment of Pressure Ulcers/ Injuries: Clinical Practice Guideline published in 2019 recommends considering expected surgical time and patient position in HAPI risk assessment and using soft silicone multi-layered foam dressings to protect the skin on high pressure areas³.

Purpose

The purpose of this study was to test whether OR-related HAPIs could be reduced through the use of a perioperative HAPI risk screening tool and an associated bundle which included the use of soft silicone multi-layered foam dressings.

Process

- A pre/post-test design was used and statistical significance of pressure injury outcomes was determined using Fisher’s Exact Test
- The baseline period was 10/2019–09/2020 and the intervention period was 10/2020–09/2022
- The Acero-Kurtz Perioperative Skin Assessment Tool was implemented for all surgeries
- Any “yes” answer resulted in activating an OR skin bundle which included pre-surgical skin assessment, safe patient handling, and use of positioning devices
- Any 2 “yes” answers or repeat surgery during the admission identified the patient as high risk and triggered the use of the OR skin bundle and the application of prophylactic soft silicone multi-layered foam dressings based upon surgical position
- OR staff and nursing leadership were educated on the Acero-Kurtz Perioperative Skin Assessment Tool. The tool was integrated into the electronic medical record.

The Acero-Kurtz Perioperative Skin Bundle. Includes the modified PRAMS risk assessment tool and the associated perioperative interventions.

An NUMC Perioperative Skin Assessment Tool

If a patient identified as high risk for developing a pressure injury, a perioperative skin bundle protocol should be implemented to mitigate harm. A bundle is a set of evidence-based interventions to help standardize care and reduce complications in the healthcare setting. (Waters et al. 2015)

Patient name: _____ MR#: _____ Date: _____

Type of Procedure: _____

All patients receiving general anesthesia will be assessed for the following risk factors	YES	NO	N/A
Diabetes			
Braden score ≤16			
Age ≥70			
Preexisting pressure injury			
*Surgical time ≥3hrs.			
Repeated/return to OR more than once during this admission			

HIGH RISK patients

☐ If "YES" to any 2 risk factors please implement OR skin bundle

☐ *Repeated/return to OR as a stand-alone criterion is considered as high risk therefore an OR Skin Bundle will be implemented.

RN name: _____ RN signature: _____ Date: ____ Time: _____

OR Skin Bundle includes the following interventions	Check here
Use Safe Patient Handling device for patient transfer	
For offloading of pressure on all areas in the following position: Prone, Lateral, Supine, Lithotomy, Jackknife, Trendelenberg and Sitting, apply multilayer silicone foam border dressing	
Apply approved positioning devices to pressure point especially the occiput	
Maintenance of normothermia (Range 96.8°F-100.4°F)	
Microclimate management by using disposable pads	
Monitor skin pressure points during operative procedure and report status to receiving nurse	

RN name: _____ RN signature: _____ Date: ____ Time: _____

Post OR procedure

Assess the integrity of the multilayer silicone foam border dressing

Assess and "peek" the skin under silicone foam border dressing

Document any skin integrity changes on flowsheet

Handoff report includes skin assessment and preventive skin dressing sites

Microclimate management by using disposable pads

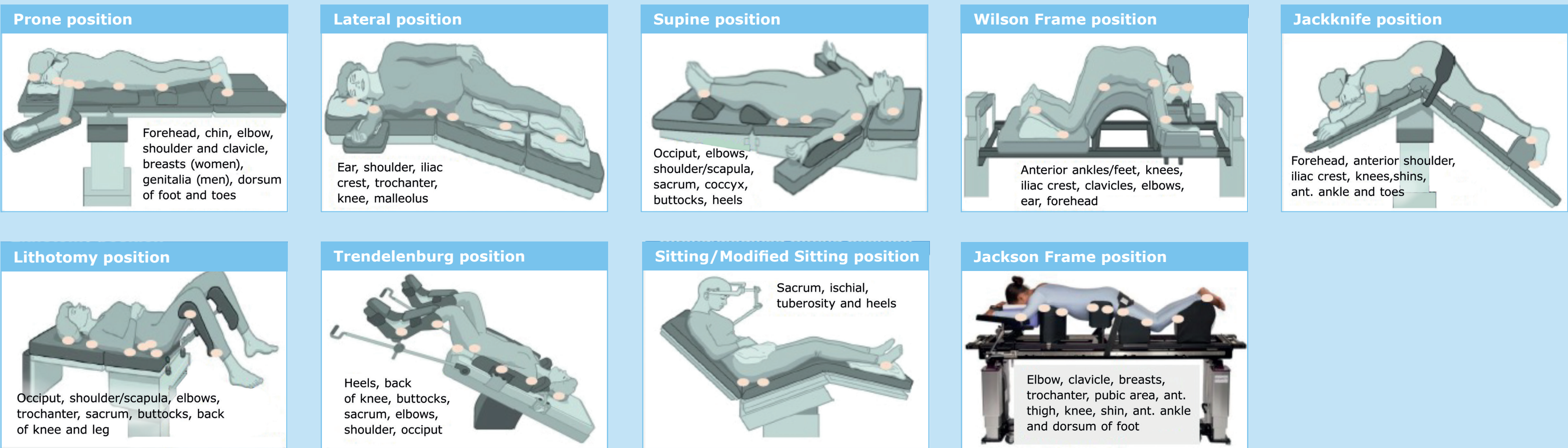
Patient is ambulatory or transferred out from PACU and mPRAMS is discontinued as of date: _____

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RN name: _____ RN signature: _____ Date: ____ Time: _____

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Staff education provided on placement of soft silicone multi-layered foam dressings based on surgical position.



Outcomes

- 100% staff education attendance was achieved
- During the intervention period, 93 surgical patients met the criteria for high-risk and received OR skin bundle and prophylactic soft silicone multi-layered foam dressings
- OR-related HAPI incidence was 0% compared to 1.9% in the baseline period (p=.0011)
- This project demonstrates that with proper staff education and the implementation of a bundle including the use of soft-silicone multilayer dressings, activated through an OR-specific risk screening process, the occurrence of HAPI in the OR can be significantly reduced.

Results	Pre-protocol implementation (10/2019 – 09/2020)	Post-protocol implementation (10/2020 – 09/2022)
Total number of OR patients	311	1272
Number that met bundle criteria	Not applicable	93
OR-acquired HAPI	6	0

*ALLEVYN® LIFE Foam Dressing, Smith and Nephew, Hull, UK.

References:

1. Creehan S, Black J. Defining Practices to Avoid Hospital-Acquired Pressure Injuries in the Operating Room. J Wound Ostomy Continence Nurs. 2022;49(1):89–96.

2. Primiano M, Friend M, McClure C, et al. Pressure ulcer prevalence and risk factors during prolonged surgical procedures. Aorn j. 2011;94(6):555–566.

3. European Pressure Ulcer Advisory Panel (EPUAP) NPIAPN, Pan Pacific Pressure Injury Alliance (PPPIA). Prevention and treatment of pressure ulcers/injuries: clinical practice guidelines. 3rd ed. 2019.