

Attempting to Systematize a Perioperative Pressure Injury Prevention Program

Jenell Moultrie MSN, RN, CNOR
Houston Methodist Hospital – Medical Center

Introduction

Hospital-acquired pressure injuries (HAPIs) are a significant and costly complication for surgical patients. The Agency for Healthcare Research and Quality (AHRQ) reports that HAPIs affect 2.5 million patients annually, contribute \$9.1–\$11.6 billion in healthcare costs, and result in up to 60,000 deaths each year. Although no national database tracks perioperative pressure injury (PPI) rates, a recent systematic review found that approximately 17% of surgical patients develop PPIs (Kurian et al., 2025).

Due to the elevated risk for pressure injuries in the perioperative setting—and an observed increase in PI incidence within our facility—we established a Perioperative Pressure Injury Prevention (PPIP) Committee in 2018. Following implementation, our PPI rate decreased from 21 cases in 2020 to 7 cases in 2024 and has since remained within this improved range.

Purpose

The Houston Methodist Hospital system includes nine facilities. The goal of this project was to standardize perioperative patient care related to pressure injury prevention by expanding the Perioperative Pressure Injury Prevention (PPIP) Program across the system.

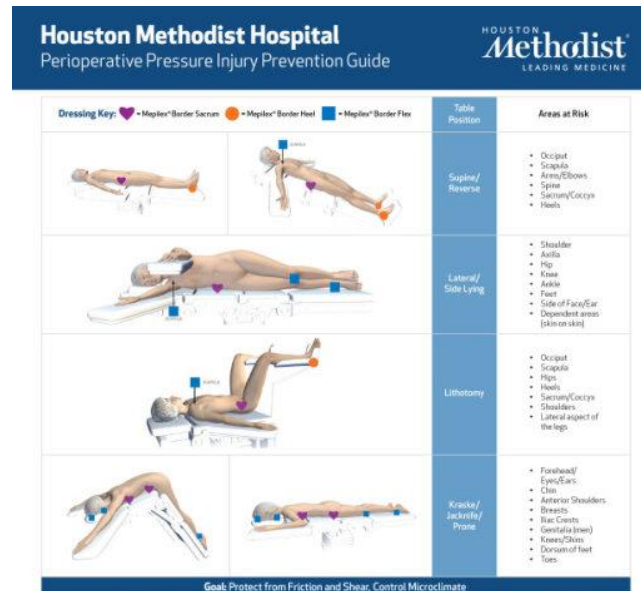
Objectives

PPIP Guide Distribution: Introduced the guide at a system educator meeting and gathered feedback to ensure alignment with practices across all facilities.

Policy Integration Efforts: Presented the PPIP Algorithm to the system skin council and assessed the feasibility of adding a perioperative-specific section to the system-wide skin policy.

EMR Integration Efforts: Consulted with the EPIC OpTime team to explore options for incorporating the algorithm into the electronic medical record

Perioperative Pressure Injury Prevention Guide



Dressing Key	Table Position	Areas at Risk
<ul style="list-style-type: none"> Mepilex® Border Sacrum Mepilex® Border Heel Mepilex® Border Flex 	Supine/Reverse	<ul style="list-style-type: none"> Occiput Scapula Arms/Elbows Spine Sacrum/Coccyx Heels
	Lateral/Side Lying	<ul style="list-style-type: none"> Shoulder Hip Knee Ankle Foot Side of Face/Ear Dependent areas (skin on skin)
	Lithotomy	<ul style="list-style-type: none"> Occiput Scapula Hips Heels Sacrum/Coccyx Shoulders Distal aspect of the leg.
	Kracke/Jackson/Prone	<ul style="list-style-type: none"> Forehead/Eyes/Ears Clav Anterior Shoulders Breasts Butt Cheeks Distal (toe) feet Distal aspect of foot Toes

Considerations for Mepilex® Border Range Dressings:

Pre-Op Area:

- Perform a thorough skin assessment and inspect bony prominences in pre-op area the day of the procedure prior to handoff to the peri-op team
- At handoff, report high risk factors, location of existing or previous pressure injury
- Document any alterations in skin integrity according to hospital policy

Peri-Operative Area:

- Consider surgery type, table position and identify skin areas at risk
- Prior to application of the dressing, write "P" for Prevention or "T" for Treatment on the dressing and date the dressing
- Document dressing application on pre-op checklist or per hospital protocol
- Lift patient, do not drag, when transferring on and off the OR table

Post-Operative Area:

- At handoff, use tabs to peel back any Mepilex® range dressings or other dressing products used for prevention, assess skin area, re-adhere dressing and document skin condition according to hospital policy/protocol
- Remove any dressings in place on the anterior body
- Consider leaving Mepilex® Border Sacrum or other prevention product in place if the patient will remain in a position that puts the skin or bony prominence at risk during the post operative recovery period
- Notify wound care clinician for suspected ulcer development

At-Risk Inclusion Criteria May Include:

Apply Mepilex® Border Sacrum If the patient meets any of the following criteria:

- Surgical procedures expected to last > 3 hours
- Cardiac arrest this admission
- Vasopressors > 48 hours
- In SHOCK, SIRS, MODS
- ECMO
- or 3 or more of the following:
 - Fecal or urinary incontinence
 - Lithotomy position
 - Multiple procedures this admission
 - Organ Failure
 - Age > 62
 - Bedrest/bedbound/restricted board
 - Diabetes
 - HGB A1C > 7
 - Liver Failure
- CV Procedures
- LOS > 3 days
- Drive Lines (LVAD, RVAD, Balloon Pump)
- Multiple surgeries/procedures this admission
- History of previous pressure injury
- Malnutrition (BMI > 35, albumin < 2.5, prealbumin > 20 or NPO > 2 days)
- Mechanical ventilation
- Previous history of pressure injury, quality of life or spinal cord injury
- Restraints
- Sedation/analgesics
- Weeping edema/antenna
- Traction


For guidance on individualized plan of care refer to PPS073 Pressure Injury Prevention and Treatment and OR506 Assessment and Prevention of Care in the OR




Results



• PPIP Guide Distribution



• Policy Integration Efforts



• EMR Integration Efforts

The PPIP Guide was successfully disseminated across the hospital system through the system educator group. However, incorporation of the PPIP Algorithm into a system-wide policy and the electronic medical record was not achieved. The system skin council concluded that adding the algorithm to a system policy was not appropriate without demonstrated, consistent use across facilities. The EPIC OpTime team provided similar feedback regarding integration into the EMR

Future Actions

Reintroduce PPIP Resources: Reintroduce the PPIP Guide and Algorithm to system educators, accompanied by focused education for their teams.

Evaluate System Outcomes: Partner with the system Quality department to assess changes in pressure injury rates following the renewed rollout.

Revisit Policy and EMR Integration: Reassess opportunities to update the system policy and incorporate the algorithm into the EMR once consistent utilization data are available.

References

Kurian S, Moore Z, Patton D, George S. The Incidence of Pressure Ulcers in Surgical Patients: A Systematic Review. *Int Wound J.* 2025 Aug;22(8): e70738. doi: 10.1111/iwj.70738. PMID: 40825923; PMCID: PMC12360911.