Pressure Injury Prevention Pathway v1.3: Overview

**Inclusion Criteria**
- All patients admitted to the hospital
- All patients admitted to or transferred from procedural areas

**Exclusion Criteria**
- Any patient with a serious disorder of the integumentary and mucous membranes (Stevens–Johnson syndrome, etc.)

**Assessments**
- Complete **Skin Assessment** (all patients) and **Braden QD Scoring** (inpatients):
  - On admission
  - On every shift
- General head-to-toe skin assessment and focus areas (additional information):
  - Assess for bogginess, redness, warmth, and scabs
  - Braids and matted hair increase risk of pressure injury
  - Assess any area around tubing/ears/head, if applicable

**Focus Areas**
- **Occiput**
  - Assess for bogginess, redness, warmth, and scabs
  - Braids and matted hair increase risk of pressure injury
  - Look with penlight through the hair and under dressings (with surgery if surgical dressings)
  - Assess any area around tubing/ears/head, if applicable
- **Shoulder Blades**
  - Assess the shoulder blades
- **Elbows**
  - Assess elbows for any pressure areas or redness from lines/tubes
- **Coccyx / Sacrum**
  - Assess sacrum area, between folds
  - Hold at hips during turns and gently separate buttocks to assess for pressure areas/injuries
- **Heels**
  - Assess heels for redness or breakdown
- **Toes**
  - Assess toes for any redness or breakdown

**Factors for High Risk of Pressure Injury**
- **Braden QD score ≥ 13**
- History of Stage 3 or 4 pressure injury
- Devices (respiratory, orthopedic, lines/tubes)
- Limited mobility, immobile and/or insensitive
- Vasoactive / inotropic medications
- Platelet count < 50,000 cells/ml
- On **Eating Disorder Refeeding** pathway
- On **Obese Care** pathway
- Current corticosteroids use (> 0.5 mg/kg/day)
- ECLS, CRRT, HFOV
- Procedure ≥ 3 hours (within last 24 hours)
- Generalized edema
- Recent hypoxic event (within last 72 hours)
- Chronic hypoxia
- Admitted to ICU (within last 48 hours)

**Provide standard care**
- No

**High risk of pressure injury?**
- Yes
- Provide prevention measures for high risk

**Provide standard care**
- No

**Pressure injury found?**
- Yes
- Manage pressure injury

**Key Acronyms**
- CN: Charge Nurse
- CNS: Clinical Nurse Specialist
- GOC: Guideline of Care
- EHR: Electronic Health Record

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For questions concerning this pathway, contact: PressureInjuryPathway@seattlechildrens.org

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Last Updated: February 2021
Next Expected Review: November 2023
Pressure Injury Prevention Pathway v1.3: Standard Care

STANDARD PREVENTION MEASURES

Primary Reference
- GOC: Skin Care and Wound Management (for SCH only)

Pressure Injury Prevention
- Keep skin clean and dry
- Apply moisturizing lotion to dry areas daily and as needed
- Perineal Care:
  - Apply barrier cream with each diaper change for patients who are incontinent (NICU and < 44 weeks gestation excluded)
  - See Job Aid: Diaper Dermatitis Treatment (for SCH only)
- Skin Prep:
  - Apply a no sting barrier film under tape or transparent dressings
- Reposition:
  - Turn/reposition at least every 2 hours if insensate or immobile (per protocol in NICU and Rehab)
  - See GOC: Immobilized or Limited Mobility (for SCH only)
- Offload:
  - Use fluidized positioners, gel cushions or pillows for bony prominences
  - Choose appropriate sleep surface/bed options for pressure relief or reduction
  - Use Z-Flo™ devices as position assistive devices

Shear Injury Prevention
- Recognize at-risk patients: fragile skin, poor tissue turgor, reduced mobility, or insensate areas
- Keep head of bed less than 30 degrees elevated unless clinically contraindicated
- Use the knee gatch on the bed when head of bed is elevated
- Prevent shearing injury by using a lift sheet or lift assist devices to move or reposition patients

Return to Overview
Pressure Injury Prevention Pathway v1.3: High Risk

HIGH RISK OF PRESSURE INJURY

Primary Reference
• GOC: Skin Care and Wound Management (for SCH only)

Prevention Measures

For All Patients

Preventive Dressings
• Apply any silicone border foam on high risk areas (as appropriate):
  • Occiput
  • Shoulders
  • Coccyx
  • Sacrum
  • Heels
  • Any hard and bony surface
• Assess each site every shift by gently lifting the dressing and checking for blanching, bogginess, temperature and scabs
• Document interventions under Pressure Injury Prevention in EHR

Appropriate Bed Surface
• Apply waffle overlay on standard hospital bed or crib
• Discuss specialty bed/mattress with CN and CNS
• Apply silicone border foam or sacral silicone border foam (do not use non-border foam)
• Handle skin gently
• Use gel pads

Positioning
• Turn/reposition at least every 2 hours
• See GOC: Immobilized or Limited Mobility (SCH only)
• Keep head of bed less than 30 degrees elevated unless clinically contraindicated
• Use bariatric waffle cushion (green) under head (avoid standard pillow)

Moisture Management
• Apply barrier cream with each diaper change (NICU and < 44 weeks gestation excluded)
• See Job Aid: Diaper Dermatitis Treatment (SCH only)

Devices (if applicable)

Respiratory Devices
• RT to manage / document
• Prevention:
  • Apply a no sting barrier film
  • Apply protective dressing
  • Assess skin and release pressure every 4 hours with RT
• If unable or pressure injury found, contact RT Supervisor
• For new trach, see Job Aid: Tracheotomy Phase 2 (Until 1st Trach Change) (SCH only)

Orthopedic Devices
• Fully assess site and surrounding skin every shift while brace removed for care
• If unable to visualize skin under a brace and/or the brace cannot be removed, consult orthotics clinician (after hours, weekends and holidays, page via operator on call orthotist) to assist with brace mobilization options and pressure risk assessment
• See GOC: Brace, Care of Patient (SCH only)

Non-RT Lines / Tubes
• Assess where lines/tubes are in proximity to skin
• Apply silicone border foam (do not use non-border)  
• See GOC: EEG Monitoring After Intracranial Lead Placement (SCH only)

Casts
• See GOC: Casts Including Spica Casts (SCH only)
• If issues, contact orthopedic surgery team

If RN is unable to complete high risk prevention measures, notify CNS

Pressure injury found?

No

Provide standard care every shift

Yes

Manage pressure injury

Return to Overview
MANAGEMENT OF PRESSURE INJURIES

Primary Reference
- GOC: Skin Care and Wound Management (for SCH only)

Stage Pressure Injury and Provide Care

Stage 1 or 2
- When Pressure Injury is Found...
  - Escalate
    - Notify Provider and CN
    - Enter an eFeedback (CNS notified)
  - Perform Initial Management
    - Apply silicone foam border (do not use non-border foam)
    - Document new pressure injury under Wound in EHR
  - Ongoing Care Every Shift
    - Assess skin under dressing
    - Review care guidelines in Orders
    - Discuss concerns/issues with CNS
    - Document care under Wound in EHR

When pressure injury is healed
  - Document skin findings
  - Deactivate dynamic group under Wound in EHR

Stage 3, 4 or Unstageable
- When Pressure Injury is Found...
  - Escalate
    - Notify Provider and CN
    - Enter an eFeedback (CNS notified)
    - Provider to order Wound Care consult after assessing
  - Perform Initial Management
    - Apply silicone foam border (do not use non-border foam)
    - Assess dressing integrity and replace as needed until Wound Care consult
    - Document new pressure injury under Wound in EHR
    - Add to Problem List in EHR
  - Ongoing Care Every Shift
    - If Wound Care instructions are NOT available
      - Assess dressing integrity and replace as needed
      - Document care under Wound in EHR
    - If Wound Care instructions are available
      - Review Wound Care Orders for wound management
      - Change dressing per Orders
      - Discuss concerns/issues with Wound Care Consultant
      - Document care under Wound in EHR

When pressure injury is healed
  - Document skin findings
  - Deactivate dynamic group under Wound in EHR

Provide prevention measures for high risk
Pressure Injury Prevention Pathway v1.3: Procedural Care

PREprocedural

Complete Pre Operative Assessment Form

Go to tab for Other Risk Assessments
- Select “Yes” if patient has history of stage 3, 4 or unstageable pressure injury
- Automatic Wound Care consult
- Assess patient’s skin (head-to-toe)
- If pressure injury found
  - Identify and document each skin abnormality
  - Select “Pressure injury present on admit”

INTRAprocedural

- Procedure ≥ 3 hours?

No

Yes

Standard INTRAprocedural Care
- Complete pre and post procedure Skin Assessment
- Use pressure redistribution devices as needed

INTRAprocedural High Risk of Pressure Injury Care
- Apply silicone border foam to the high risk area AND / OR
- Use pressure redistribution devices
- Document INTRAprocedural assessment
- Discuss position change(s) with surgical and anesthesia team every 3 hours

POSTprocedural

- For patients in an ICU crib that require limited mobility POSTprocedure, place a waffle mattress on crib

Inpatient Handoff
- Complete IR / OR to ICU Handoff Procedure
- Identify any skin issues or concerns

No

Yes

Procedural / PACU Handoff
- Complete OR to PACU RN Handoff
- Report area(s) of concern OR history of pressure injury to receiving RN

Provide prevention measures for high risk

Return to Overview
Skin Assessment

When assessing the common pressure points, consider:

- Any bony prominence
- Thorough exam of the skin

In most immobilized patients in the hospital, patients are placed in the supine position.

The **high risk areas** for patients in the supine position include (but not limited to):

- Occiput
- Scapula (Shoulder Blades)
- Elbows
- Coccyx / Sacrum
- Calcaneus (Heels)

While these are high risk areas, any device or position change can present new areas of pressure not outlined above.

Skin assessment tips:

- Occiput:
  - Assess color differences on the scalps, noting any redness, scabs or loss of hair
    - If there are dressings, assess the area under the dressing at least once a shift or as ordered by the provider team
  - Palpate the area around and on the occiput, trying to locate any area of bogginess which may indicate a pressure injury

- Coccyx / Sacrum:
  - Hold hips when assessing this area
  - Gently separate gluteal muscle to assess for pressure areas / injury

- All other pressure areas, assess for redness or any skin breakdown
Approved by the CSW Pressure Injury Prevention Pathway team for go-live on Nov. 12, 2018

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This pathway was developed through local consensus based on published evidence and expert opinion as part of Clinical Standard Work at Seattle Children’s. Pathway teams include representatives from Medical, Subspecialty, and/or Surgical Services, Nursing, Pharmacy, Clinical Effectiveness, and other services as appropriate.

When possible, we used the GRADE method of rating evidence quality. Evidence is first assessed as to whether it is from randomized trial or cohort studies. The rating is then adjusted in the following manner (from: Guyatt G et al. J Clin Epidemiol. 2011;4:383-94.):

**Quality ratings are downgraded** if studies:
- Have serious limitations
- Have inconsistent results
- If evidence does not directly address clinical questions
- If estimates are imprecise OR
- If it is felt that there is substantial publication bias

**Quality ratings are upgraded** if it is felt that:
- The effect size is large
- If studies are designed in a way that confounding would likely underreport the magnitude of the effect OR
- If a dose-response gradient is evident

Guideline – Recommendation is from a published guideline that used methodology deemed acceptable by the team.

Expert Opinion – Our expert opinion is based on available evidence that does not meet GRADE criteria (for example, case-control studies).

**Quality of Evidence:**
- ⭐⭐⭐⭐ High quality
- ⭐⭐⭐ Moderate quality
- ⭐⭐ Low quality
- ⭐⭐⭐⭐ Very low quality

Guideline
Expert Opinion
Summary of Version Changes

- **Version 1.0 (11/12/2018):** Go live.
- **Version 1.1 (10/24/2019):** Updated factors for high risk of pressure injury: removed Malnutrition Screening pathway, added Eating Disorder Refeeding pathway, added Obese Care pathway and added ICU admission within 48 hours. Updated Approval & Citation page.
- **Version 1.2 (5/7/2020):** Renamed GOC 10201 and GOC 10965. Removed GOC 11163. Removed references to Allevyn™, Cavilon™, Mepilex®, and Optifoam® brands; used generic names instead.
- **Version 1.3 (2/19/2021):** Aligned verbiage to correspond with Epic: changed Braden Q to Braden QD and CAREDEX to Orders.
Medical Disclaimer

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required.

The authors have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication.

However, in view of the possibility of human error or changes in medical sciences, neither the authors nor Seattle Children’s Healthcare System nor any other party who has been involved in the preparation or publication of this work warrants that the information contained herein is in every respect accurate or complete, and they are not responsible for any errors or omissions or for the results obtained from the use of such information.

Readers should confirm the information contained herein with other sources and are encouraged to consult with their health care provider before making any health care decision.
Search Methods, Pressure Injury Prevention Pathway, Clinical Standard Work

Studies were identified by searching databases using search strategies developed and executed by a medical librarian, Susan Groshong. Searches were performed in March 2018, in the following databases: Ovid Medline, Ovid Joanna Briggs Institute, Embase, Cochrane Database of Systematic Reviews, National Guideline Clearinghouse, TRIP, Cincinnati Children’s Evidence-Based Recommendations and Registered Nurses’ Association of Ontario Best Practice Guidelines. In Medline and Embase, appropriate Medical Subject Headings (MeSH) and Emtree headings were used respectively, along with text words, and the search strategy was adapted for other databases using text words, for the concept of pressure injuries. Retrieval was limited to humans, English language, 2008 to current and further limited to certain evidence categories, such as relevant publication types, index terms for study types and other similar limits.

Susan Groshong, MLIS
August 20, 2018

Flow diagram adapted from Moher D et al. BMJ 2009;339:bmj.b2535


Moore Zena EH, Webster J. Dressings and topical agents for preventing pressure ulcers. Cochrane Database of Systematic Reviews [PIP]. 2013(8).


