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Pressure Ulcer Prevention in the O.R. Recommendations and Guidance

These recommendations are intended to provide guidance to improve the consistency of pressure ulcer prevention in operating rooms and other invasive procedure areas across Minnesota hospitals and to address issues identified through the reporting of pressure ulcer events. The recommendations are not intended to address all of the AORN Perioperative Standards and Recommended Practices or other regulatory surgical requirements.

I. General - Perioperative Skin Champions

A. At least one perioperative skin champion/team member/liaison with clear roles, expectations, and dedicated time to serve in that role should be designated from the perioperative nursing staff. Champions/team members/liaisons should represent all phases of care: pre-operative; intra-operative, and post-operative.

B. At least one perioperative skin champion/team member/liaison with clear roles, expectations, and dedicated time to serve in that role should be designated from anesthesia.

   a. Roles and expectations *may* include but are not limited to:

      - Serve as an interdepartmental liaison for skin related issues (e.g., membership and attendance at hospital-wide pressure ulcer prevention committee meetings).
      - Facilitate annual review, and make recommendations for, department specific skin related policies, procedures, product trials and education.
      - Disseminate relevant skin safety information to perioperative administration and staff including pressure ulcer cases and incidence data.

C. Perioperative administration members should participate in developing and monitoring an organization-wide risk control plan for pressure ulcer prevention and management.

D. A standard form of communication, such as the Aultman Tool, should be in place to inform those caring for the patient following the procedure about the position of the patient during the procedure and any particular areas of the body that should be monitored for skin breakdown.

II. Preoperative Staff (Prior to Hand-off to Operating Room/Procedure Staff)

A. Risk Assessment

- All surgical patients should be considered **at risk** for pressure ulcer development and standard pressure ulcer prevention precautions should be implemented.
- Prior to hand-off to the operative/procedure team, staff should assess the patient's surgical risk factors for pressure ulcer development. Patients meeting any of the following criteria that would put them at **high-risk** for pressure ulcer development should be considered for additional prevention interventions.

High-Risk Criteria

At a minimum, patients with any of the following risk factors should be considered at high-risk for pressure ulcer development in the operating/procedure room:

- *Procedures lasting >3 hours*
- *Cardiac, vascular, trauma, transplants, bariatric procedures**
- *Body mass index (BMI) of <19 or >40*
- *Bed bound, chair bound, or unable to reposition*
- *Impaired sensation*
- *History of pressure ulcers/existing skin breakdown*
- *Hospital-specific risk factors (patients that the hospital's data indicates are at higher risk for developing pressure ulcers)*

*AORN states that cardiac, general, thoracic, orthopedic, and vascular procedures were reported to be the most common types of procedures associated with pressure ulcer formation. Several Minnesota Hospitals have had a ***high incidence among emergent abdominal surgery cases.***

B. Skin Inspection - Inpatients

- A thorough preoperative/pre-procedure skin inspection should be performed the day of the procedure prior to hand-off to the perioperative/procedure team.

- *Sample scripting for staff conducting skin inspection*
  "Because we know that being in one position for a period of time such as in surgery can put you at risk for getting a bedsore or what we call a pressure ulcer, I am going to take just a couple of minutes and check your skin from head to toe now before you go into surgery."

C. Skin Inspection and Risk Assessment - Outpatients

- The facility should have a screening process for all outpatients to determine if the patient meets any of the above criteria that would make that patient at high-risk for pressure ulcer development.

- A thorough preoperative/pre-procedure skin inspection should be performed the day of the procedure for outpatients meeting high-risk criteria.

D. Hand-off Communication:

- Upon transfer of patient care to operative/procedure staff, staff transferring care should communicate:
    - If the patient is at high-risk for pressure ulcer development
    - The patient's specific risk factors
    - Results of skin inspection

II. Operative/Procedure Staff

A. Surface Selection

- If a patient is assessed to be at high-risk for pressure ulcer development, a support surface with pressure redistributing properties greater than the traditional* procedure bed mattress should be used during the procedure.

  **The traditional procedure bed mattress usually is constructed of one to two inches of foam covered with a vinyl or nylon fabric. Research studies have found that foam overlays or replacement pads, which represent most OR and procedure bed mattresses, do not have effective pressure-redistribution capabilities.*

  Additional Considerations:

  - The number of pads, blankets and warming/cooling blankets placed **beneath** the patient between the patient and the procedure bed mattress interferes with the pressure redistribution properties of the mattress.
  - If a warming/cooling blanket is placed between the patient and the procedure bed mattress, a higher grade surface should be considered to account for the change in pressure redistribution.
  - Mattresses should provide sufficient support and padding and should not "bottom out."
  - Assure sheets under patient are smooth. Eliminating wrinkles in the sheets can prevent skin damage from occurring.

B. Lateral Transfers

Facilities should have a policy addressing patient transfer processes to prevent shearing of patient's skin during transfers. The policy should address, at a minimum:

- The number of staff required during transfer based on patient's weight, with a goal of reducing caregiver patient handling loads at or below 35 pounds.** ***Adopted from the SAFE LIFT best practices developed by the Safe Patient Handling Work Group*
- Appropriate transfer device**s**

    - A lateral transfer device, e.g., friction-reducing sheets, slider boards, air-assisted transfer devices, should be used for supine-to-supine patient transfer.
- Lifting of heels while transferring, even with the use of transfer devices, to prevent shear injuries
- Repositioning or settling the patient after transfer
- Whether or not transfer device can be left under patient during procedure
    - Facility should check manufacturer's instructions for transfer devices regarding whether or not device can be left under patient during the procedure and clearly document and communicate expected practice to operative/procedure staff.

C. Patient Positioning Equipment Selection

- Operative/Procedure staff should anticipate, obtain, and verify appropriate positioning and pressure redistribution equipment prior to the procedure.
- Positioning equipment used should be designed specifically for surgical procedure positioning. Towels and sheet rolls do not reduce pressure and should not be used.
- Positioning devices should be placed underneath the patient and not beneath the procedure bed mattress as they may negate the pressure-redistribution effect of the procedure bed mattress.
- Pillows and molded-foam devices may produce only a minimum amount of pressure redistribution and are less effective during long procedures.

D. Patient Positioning

- The operative/procedure team should implement general positioning safety measures as defined in AORN positioning standards.
- Responsibility for positioning and repositioning the patient should be assigned and well defined (i.e. perioperative or circulating RN)
- When patient is in a supine position, the patient's heels should be suspended off the surface when possible.
- Other areas of increased risk for pressure ulcers, based on patient position include:

Position	Areas of increased risk for pressure ulcer development
Supine/Lithotomy	Scapula, occiput, elbows, sacrum, coccyx, heels
Lateral	Ear, acromion process, trochanter, medial and lateral condyles of the knee,

	malleolus, foot edge on involved side
Prone/Jackknife	Nose, forehead, chest, acromion process, genitalia, breasts, iliac crests, patella, foot edge and toes
Trendelenburg/ Reverse Trendelenburg	Risk for shear injuries increase when changing the patient's position from supine to Trendelenburg or reverse Trendelenburg. Measures should be taken to prevent patient from sliding on the procedure bed

E. Patient Repositioning

- The operative/procedure team should evaluate and communicate planned strategies for repositioning the patient every two hours during lengthy procedures (>3 hours). **Examples** of repositioning, *if not medically contraindicated*:
    - Anesthesia care provider moves patient's head when in a supine position to prevent pressure ulcers on the occiput or under a cervical collar.
    - Circulating nurse performs small shifts of position to redistribute pressure such as re-checking/re-positioning heels after 2 hours to make sure they are still floating off the surface or micro-shifts off the sacrum.
    - Reposition devices when possible, such as face mask, nasal/oral tubes, and temperature probes.

Additional Positioning Considerations:

- Whenever procedure table is repositioned, patient position should be re-assessed.
- Patients have developed pressure ulcers in the OR from lying on hair braids and from body piercings.
- Ensure that prep solutions do not pool beneath patient.
- To prevent injury in Trendelenburg or reverse Trendelenburg positions, shoulder braces should be avoided.
- A padded footboard should be used for reverse Trendelenburg position.

F. Hand-off Communication: Post-Operative Surface Selection and Positioning

- The operative/procedure staff should communicate as early as possible to the PACU or Unit staff, the need for postoperative advanced support surface with

features and components such as low air loss, viscous fluid, air fluids, or alternating pressure for patients meeting the following criteria:
    - Anticipated postoperative hemodynamic instability, e.g., IABP, dissection case, ALVAD procedure or trauma
    - Patients meeting preoperative high risk criteria
    - Medical contraindications to turning patient
    - Surgeon/RN discretion

- The operative/procedure staff should also communicate to the PACU or Unit staff the following information:
    - Patient positioning in the PACU, e.g., lateral, prone, with suggestion to place patient in alternate position if not medically contraindicated
    - Any areas of possible pressure ulcer concern occurring during the procedure.
    - Any existing pressure ulcers
    - Preoperative pressure ulcer risk factors

Following surgery, patients often remain immobile for extended periods of time, e.g., time in PACU + time getting settled in back on the floor. Effective postoperative communication and appropriate surface selection are vital to preventing pressure ulcer development during this postoperative time period.

III. PACU Staff

- If not medically contraindicated, reposition patient in a different position than OR position
- Suspend heels off the bed/surface
- Consider upgrading surface for patient at high-risk for pressure ulcer development, e.g., gurney with upgraded pressure redistribution surface
- The PACU staff should communicate to the unit staff the following information:
    - Patient positioning in the PACU, e.g., lateral, prone, with suggestion to place patient in alternate position if not medically contraindicated
    - Any areas of possible pressure ulcer concern occurring during the procedure.
    - Any existing pressure ulcers
    - Preoperative pressure ulcer risk factors

IV. Post-PACU

- If not medically contraindicated, reposition patient in a different position than previous OR and/or PACU position
- Develop ongoing repositioning schedule/plan
- Suspend heels off the bed/surface
- Ensure patient is on the appropriate support surface
- Conduct skin inspection upon admission/transfer to the unit per unit/hospital policy.

References:

1. Recommended Practices for Positioning the Patient in the Perioperative Practice Setting. In Perioperative Standards and Recommended Practices Edited by Ramona Conner, Joan Blanchard, Byron Burlingame, Bonnie Denholm, Sharon Giarrizzo-Wilson, Mary Ogg, and Sharon A. Van Wicklin. Vol. 1. 2012.