



 **AORN | LIVE EVENTS**

REGIONAL CONFERENCE

Under Pressure: Your Role in Reducing Positioning & Pressure Injury Risk

Susan M. Scott

MSN, RN, WOC Nurse

CEO Scott Triggers PLLC

Objectives

- Identify trends in risk assessment, prevention, incidence, cost, and litigation for Perioperative Pressure Injuries (PPI).
 - Illustrate components of a Perioperative Pressure Injury Prevention Program (PPIPP) to reduce risk of PI in the surgical and procedure areas.
 - Describe the commonly used surgical positions, medical devices and associated pressure points, with the impact on tissue deformation as a risk factors for positioning injuries.
-

Surgery is a high-risk environment for PI

“Surgery is one of the few times a normal, healthy individual is placed at risk for pressure sores.”¹

“The OR is known to be one of the most high-risk environments”²

1. Gendron, F. “Burns” occurring during lengthy surgical procedures. *Journal of Clinical Engineering*. 1980;5:19–26.
2. Guideline for prevention of perioperative pressure injury. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:751-776.

Pressure injury definition (NPIAP, 2019)³

- A pressure injury is localized damage to the skin and underlying soft tissue usually over a bony prominence or related to a medical or other device.
- The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear.
- **The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue.**

Problem: Perioperative pressure injury (PPI)

- PPI is associated with the surgical position or medical device.⁴
- A PPI is detected through visual skin assessment (VSA) within 1-4 days^{5,6}
- Deep tissue injury may take up to 7 days^{5,6}
- Pain is a common complaint³



CABG 48 hrs post-op

3. *Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline.* 3rd ed. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel (NPIAP), and Pan Pacific Pressure Injury Alliance; 2019.

4. Scott S. Progress and Challenges in Perioperative Pressure Ulcer Prevention. *J Wound Ostomy Continence Nurs.* 2015;42 (5):480-485

5. Gefen A, Creehan S, Black J. Critical biomechanical and clinical insights concerning tissue protection when positioning patients in the operating room: A scoping review. *Int Wound J.* 2020;1-19.

6. Hayes RM, Spear ME, Lee SI, et al. Relationship between time in the operating room and incident pressure ulcers: a matched case-control study. *Am J Med Qual.* 2015;30(6):591-597.

Situation & strategy

Prevention Programs

Price

People

Process

Product

2. Guideline for prevention of perioperative pressure injury. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2023
7. AORN Position Statement on Prevention of Perioperative Pressure Injury. *AORN J*, 2022;115(5):458-461.
8. Scott, S. Perioperative Pressure Injuries: Protocols and Evidence-Based Programs for Reducing Risk. *PSQH*, 2016;13(4), 20-28.

AORN position statement on prevention of perioperative pressure injury⁷

- Health care organizations should define in a policy and procedure a method to determine how perioperative-acquired pressure injuries (PPI) are identified.
- Consult with WOC nurse with suspected PI
- Monitor monthly incidence of PPI and use as a quality indicator
- Report PPI incidence rates in standard method
- Use RCA to investigate reported and confirmed PPI
- Report PPI rates and RCA to perioperative staff
- Review RCAs of PPI for trends and to create QI initiatives

Incidence & prevalence

- Surgeries in US⁹
 - 7.3 Million - Inpatient
 - 9.9 Million - Ambulatory
 - 57.1% Medicare/Medicaid
- Exact incidence of Perioperative PI is unknown¹⁰
- NDNQI¹¹
- Incidence & Prevalence
 - Chen - Range 0.3%-57% mean 15%¹²
 - Shafipour - almost 19%¹³
 - Surgery >3 hrs 8.5%⁵

5. Gefen A, Creehan S, Black J. Critical biomechanical and clinical insights concerning tissue protection when positioning patients in the operating room: A scoping review. *Int Wound J.* 2020;1-19.

9. Agency for Healthcare Research and Quality. Surgeries in Hospital-Based Ambulatory Surgery and Hospital Inpatient Settings (H-CUP statistical brief #223). Washington DC: AHRQ; 2014.

10. Creehan S, Black J. Defining Practices to Avoid Hospital-Acquired Pressure Injuries in the Operating Room. *J Wound, Ostomy and Continence Nurs.* 2022;49(1):89-96. doi: 10.1097/WON.0000000000000835.

11. NDNQI The National Data Base of Nursing Quality Indicators (NDNQI) Guidelines for Data Collection and Submission on Pressure Injury Indicator. 2021. Accessed July 24, 2022 at Microsoft Word - Guidelines - Pressure Injury_2021128 (nursingquality.org)

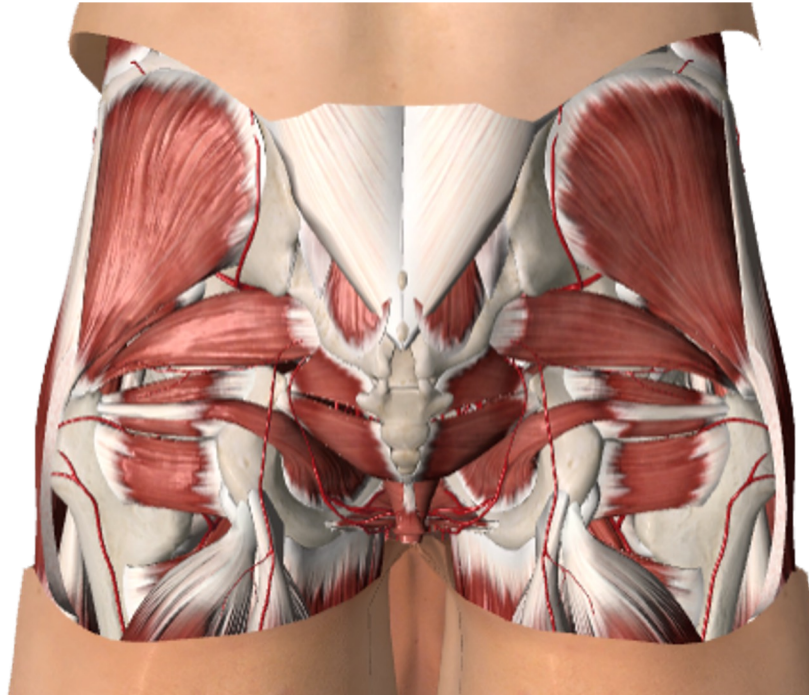
12. Chen H, Chen X, Wu J. The incidence of pressure ulcers in surgical patients of the last 5 years: a systematic review. *Wounds.* 2012;24(9):234-241.

13. Shafipour V, Ramezanpour E, Gorji, MAH, Moosadadeh M, Prevalence of postoperative pressure ulcer: A systematic review and meta-analysis. *Electronic Physician* Nov 2016;8(11):3170-3176. <http://www.ephysician.ir/2016/3170.pdf> Accessed March 23, 2019.

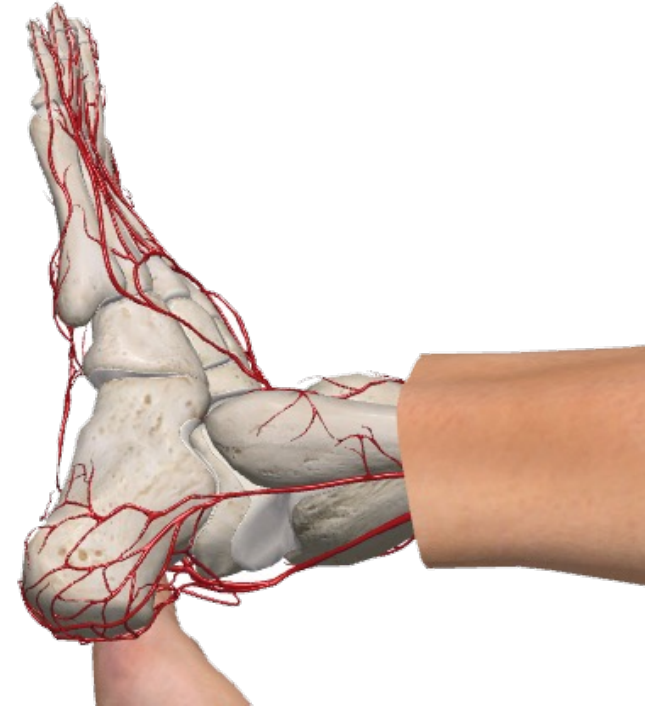
OR Pressure injury locations²



Occiput



Sacral Buttocks



Heels

Challenges: cost & quality

- Cost¹⁴
 - 26.8 billion
 - 59% non-reimbursed by CMS
- Hospital acquired conditions^{15,16}
 - PSI-90 - 48,700 (2016)
 - \$ 2 Billion
- Litigation¹⁷
 - \$250,000



HAPIs
exclusively
increasing
since 2015¹⁶

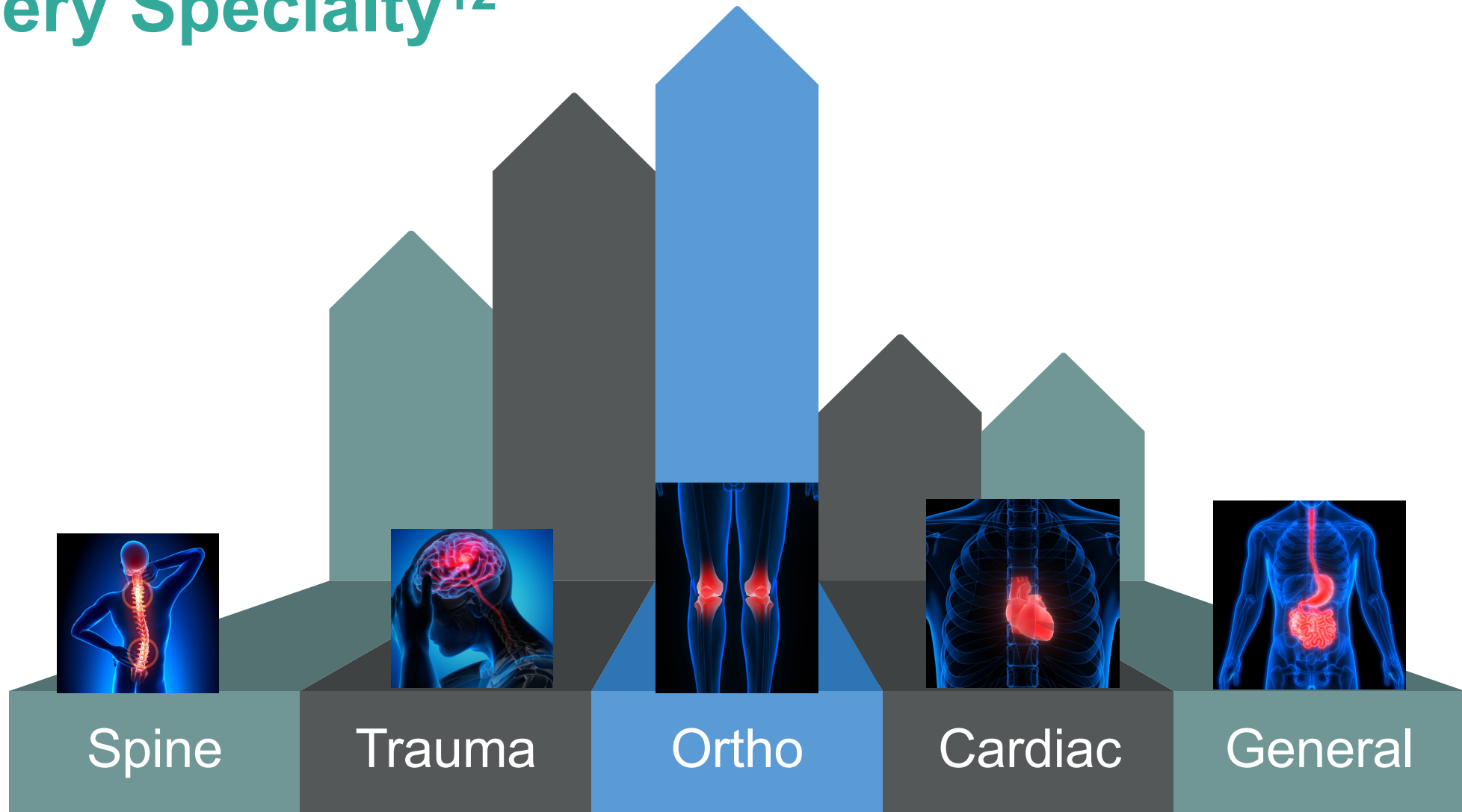
14. Padula WV, Delarmente BA. The national cost of hospital-acquired pressure injuries in the United States. *Int Wound J.* 2019;1-7.

15. IBM Watson Health, Research Brief Hospital-Acquired Conditions lead to avoidable cost and excess deaths (2018). Available at <https://www.ibm.com/downloads/cas/X97QXLER> Retrieved January 31, 2023.

16. Padula WV, Black JM, Davidson PM, Kang SY, Pronovost PJ. Adverse Effects of the Medicare PSI-90 Hospital Penalty System on Revenue-Neutral Hospital-Acquired Conditions. *J Patient Saf.* 2020 Jun;16(2):e97-e102. doi: 10.1097/PTS.0000000000000517. PMID: 30110019.

17. Bennett R, O'Sullivan J, DeVito E, Remsburg R. The increasing medical malpractice risk related to pressure ulcers in the United States. *J Am Geriatr Soc.* 2000;48(1):73-81.

Surgery Specialty¹²



12. Chen H, Chen X, Wu J. The incidence of pressure ulcers in surgical patients of the last 5 years: a systematic review. *Wounds*. 2012;24(9):234–241.

Strategy

Prevention Programs

Price

People

Process

Product

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8. Scott, S. Perioperative Pressure Injuries: Protocols and Evidence-Based Programs for Reducing Risk. *PSQH*, 2016;13(4), 20-28

People : Interprofessional Team

- Leadership²
- Team Collaboration^{2,3}
 - OR Staff, WOC nurse, QI
 - Anesthesia & Surgery
 - PACU
- Knowledge, Skills, Attitude (KSA)¹⁸⁻²²
 - Competency
 - Education - enduring
- Handoff Communication



2. Guideline for prevention of perioperative pressure injury. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:751-776.

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18. Creehan S, Black J. Defining Practices to Avoid Hospital-Acquired Pressure Injuries in the Operating Room. *J Wound, Ostomy and Continence Nurs*. 2022;49(1):89-96. doi: 10.1097/WON.0000000000000835.

19. Stanton C. Guideline for Prevention of Perioperative Pressure Injury. *AORN J*. 2022;115(5):8-10.

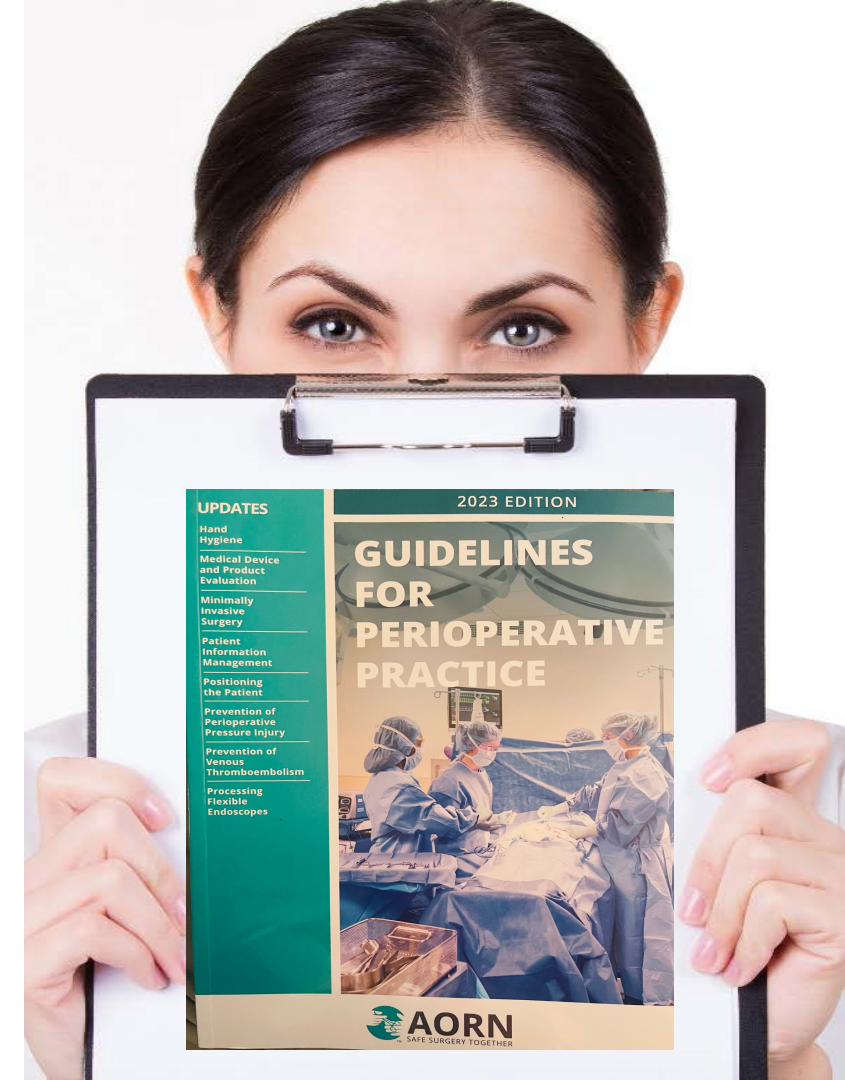
20. Cebeci F, Senol Celik S. Knowledge and practices of operating room nurses in the prevention of pressure injury. *Journal of Tissue Viability*. 2022;31(1):38-45 Available at: <https://www.sciencedirect.com/science/article/pii/S0965206X2100092>.

21. Khong BPC, Goh BC, Phang LY, David T. Operating room nurses' self-reported knowledge and attitude on perioperative pressure injury. *Int Wound J*. 2020;17:455-465.

22. Lupear SK, Overstreet M, Krau SD. Perioperative nurses' knowledge of indicators for pressure ulcer development in the surgical patient population. *Nurse Clin N Am*. 2015; 50:411-435.

Process: Standards of Care

- Strategic Plan^{2,23}
- Policy and Procedure²
- Risk Assessment^{2,7,8}
- Skin Bundles^{2,24}
- Standardize equipment & devices²⁶
- QI work, RCA & Action^{7,8,25}
- Data management
- EHR Documentation



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23. Scott SM. Creating a strategic plan for perioperative pressure ulcer prevention. *AORN J*. 2016;103(4):13-14.

24. Scott S. Use of an OR skin bundle to prevent pressure injury. *AORN J*. 2017;106(4):18-19.

25. Scott SM, Bennett J. Avoiding pressure injuries with root cause analysis and action. *AORN J*. 2018;108(5):15-16.

26. Scott Triggers Gap Assessment Template in AORN Prevention of Perioperative Pressure Injury Tool Kit. Available at <https://scotttriggers.com/resources>

Perioperative Plan of Care



Pre-op



Intra-op



Post-op

2. Guideline for prevention of perioperative pressure injury. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:751-776.

33. Guideline for positioning the patient. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:701-750.

34. Guideline for safe patient handling and movement. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:895-944.

Risk Factors

Intrinsic - Extrinsic

2. Guideline for prevention of perioperative pressure injury. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:751-776.

Patient specific risk factors

- Type of Procedure ²
- Time on the table and immobility before surgery. ³
- Obesity ³³
- Pregnant ³³
- Disabilities ³³
- Critically Ill, Spinal Cord Injury (SCI), Palliative Care ³
- **Critical devices catheters and drainage tubes** ²
- Vascular perfusion and effects of inotropes/vasopressors ^{3,33}
- Anesthesia type and ASA score ^{2,3}

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3. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline. 3rd ed. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel (NPIAP), and Pan Pacific Pressure Injury Alliance; 2019.

33. Guideline for positioning the patient. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:701-750.

AORN statement on risk assessment²

- “Preoperative PI risk assessments should
 - be visual,
 - be comprehensive, and
 - incorporate a structured risk assessment tool for use in perioperative patients that is specific to the age of the patient and that has been validated (e.g., Munro Scale, ELPO, PRAMS) or
 - demonstrated to be reliable (e.g., Scott Triggers).”

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Preoperative risk assessment ²

- “High Quality Evidence to support the use of a Risk Assessment Tool.”
 - Munro Scale
 - ELPO
 - PRAMS
 - Scott Triggers
- “Risk assessment tools **DO NOT** replace the need comprehensive patient assessment”



Scott Triggers©

- OR specific risk assessment tool⁴
- Validity/Reliability studies:
- Park et al. 2019, N=400 Higher Sensitivity ST > Braden²⁸
- Emerson 2020, N=11,241 – PI reduction. P=0.015^{29,30}
- Dai Yang & Wu 2021 N=447 “Good reliability, validity, and predictive validity.”³¹



SCOTT TRIGGERS

SCOTT TRIGGERS ASSESSMENT	Does it meet these qualifications?	If YES please place check here
Age _____	Age 62 or older	
Serum Albumin g/dL or BMI	Albumin level < 3.5g/dl or BMI <19 or > 40	
ASA score (circle) 1 2 3 4 5	ASA score 3 or greater	
Estimated surgery time in hours/minutes	Surgery time over 3 hours or 180 minutes	
Two or more YESSES =	HIGH RISK SURGICAL PATIENT	Implement OR skin bundle

4. Scott S. Progress and Challenges in Perioperative Pressure Ulcer Prevention. *J Wound Ostomy Continence Nurs.* 2015;42 (5);480-485

28. Park SK, Park HA, Hwang H. Development and Comparison of Predictive Models for Pressure Injuries in Surgical Patients. *J Wound Ostomy Continence Nurs.* 2019;46(4)291-297.

29. Emerson T. Preventing pressure injuries in patients placed on a spinal table *AORN J* 2019;109(5):11-13.

30. Emerson T, Myers KBJ, Fernandez, JC, Burkett S, Quion S, Bangud CC, and Shuman, MLH The Perioperative Journey: An Approach to Decreasing Hospital Acquired Pressure Injury Associated with the Intraoperative Phase of Care. Poster presented at the AORN Global Conference and Expo, 2020.

31. Dai J, Yang Z, Wu C. The reliability and validity of the Scott Triggers for patients in China undergoing gastrointestinal surgery. *Asian J Surg* 2021;44(10):1343-1344.

Artificial intelligence & bundles 29,30

 Scott Triggers

Scott Triggers Risk Assessment

Age 62 or Older (Current Age: 69)	<input type="button" value="No"/>	<input type="button" value="Yes"/>
Albumin Level <3.5 g/L (Current Albumin Level: 3.2)	<input type="button" value="No"/>	<input type="button" value="Yes"/>
BMI <19 or >40 (Current BMI: 46.37)	<input type="button" value="No"/>	<input type="button" value="Yes"/>
ASA Score 3 or Greater (Current ASA: 4)	<input type="button" value="No"/>	<input type="button" value="Yes"/>
Surgery Time Over 3 Hours or 180 Minutes (Scheduled Surgery Time: 185 Minutes)	<input type="button" value="No"/>	<input type="button" value="Yes"/>

****Patient is at High Risk for Developing a Pressure Ulcer****

Choose Patient's Position

Please see positioning instructions in the sidebar report titled **JHH OR Scott Triggers Prone Position.**

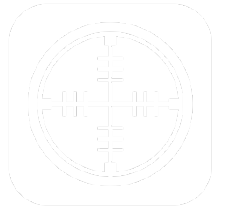
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Used with permission. Terry Emerson, MSN, RN, CNOR, NEA-BC, Nurse Manager, Neurosurgery/Orthopedic/Otology and Trauma/Transplant Services, Zayed/Bloomberg Operating Rooms. The Johns Hopkins Hospital.

29. Emerson T. Preventing pressure injuries in patients placed on a spinal table *AORN J* 2019;109(5):11-13.

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Skin Assessment



Timing

Skill

Accuracy

Documentation

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3. *Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline*. 3rd ed. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel (NPIAP), and Pan Pacific Pressure Injury Alliance; 2019.

25. Scott SM, Bennett J. Avoiding pressure injuries with root cause analysis and action. *AORN J*. 2018;108(5):15-16.

OR skin bundle

- Pre-op risk and skin assessment^{2,7-8}
- Safe Patient Handling Movement³⁴
- Reduce, Relieve, or Redistribute Pressure
 - OR table support surfaces^{2,33}
 - Approved positioning devices^{2,33}
 - Padding bony prominence²
 - Heel offloading devices^{2,8,24}
 - Prophylactic dressings^{2,18,32}
- Communication and documentation²

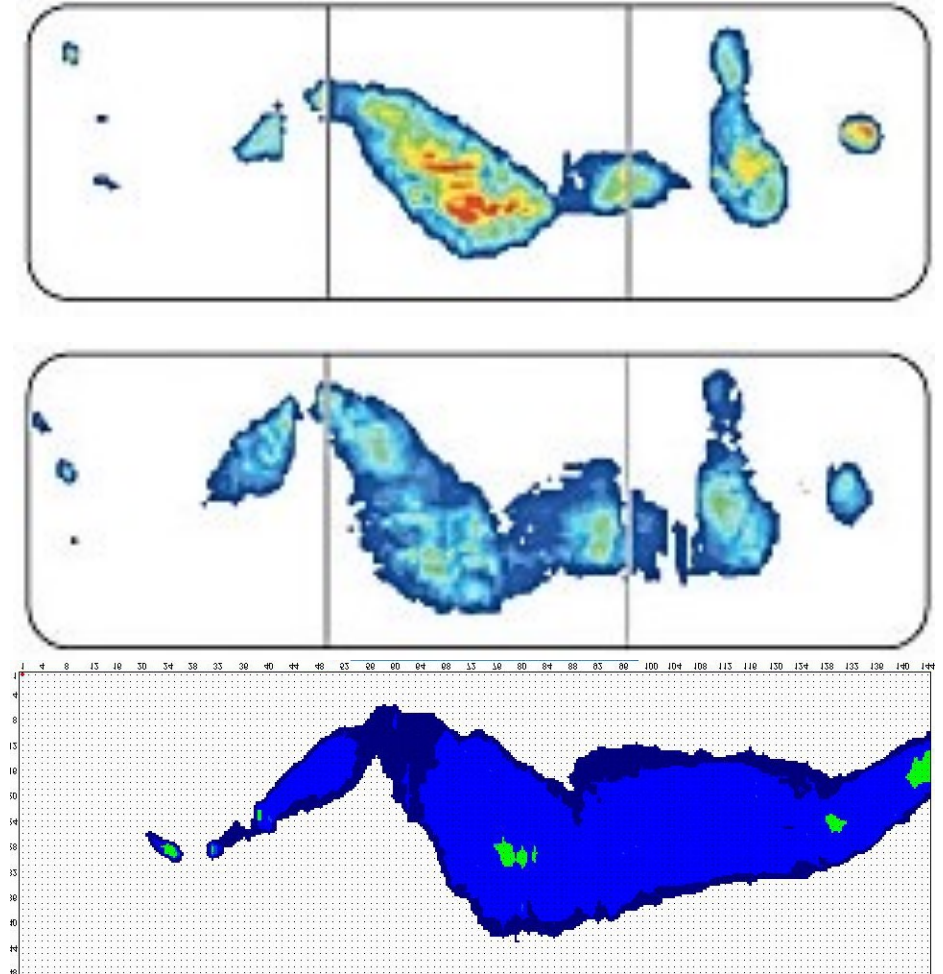


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26. Scott Triggers Gap Assessment Template in AORN Prevention of Perioperative Pressure Injury Tool Kit. Available at <https://scotttriggers.com/resources>
32. Betts H, Scott D, Makic MBF. Using Evidence to Prevent Risk Associated with Perioperative Pressure Injuries. *J Perianesth Nurs*. 2022 Jun;37(3):308-311. doi: 10.1016/j.jopan.2021.08.010. Epub 2022 Mar 4. PMID: 35256249.
33. Guideline for positioning the patient. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:701-750.
34. Guideline for safe patient handling and movement. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:895-944.

OR table pads check specifications

- Therapeutic weight capacity ²
- Thickness 3-4 in. ^{2,4}
- Stability for positions ²
- Radiolucency
- Research, standardized testing ⁴

Immersion & Envelopment ^{2,3}



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3. *Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline*. 3rd ed. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel (NPIAP), and Pan Pacific Pressure Injury Alliance; 2019.

4. Scott S. Progress and Challenges in Perioperative Pressure Ulcer Prevention. *J Wound Ostomy Continence Nurs*. 2015;42 (5);480-485

Step 2: Determine if Scott Trigger

Scott Trigger
Score
 ≥ 2

Age ≥ 62 years

Albumin Level
 ≤ 3.5 g/dL
or
BMI < 19 or
 > 40

Estimated Surgery
Time > 3 hours



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Intraoperative Interventions

Product selection, care, and maintenance

- Support surfaces ^{2,4}
- Positioning devices ^{2,33}
- Prophylactic dressings ²
- SPHM devices ³⁴
- Stretchers ³⁴
- Selected by team ^{2,33}
- Evidence-based⁴
- Efficacy evaluations⁴
- Equipment standardization ⁴
- Availability²
- Maintenance ³³
- Budget ⁴

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Safe patient handling movement (SPHM)³⁹

- Culture of Safety
- Formal systemized SPHM Program
- Ergonomic design principles
- Technology solutions
- Education, training, and staff competency
- Equipment, devices
- QI to evaluate SPHM program



AORN SPHM recommendations “supine”³⁹



- Weight < 157 lb.
 - Use lateral transfer device & 2-4 perioperative team members
- Weight > 157 lb.
 - Use assistive technology (eg, air-assisted transfer systems, a mechanical patient lift with a supine sling) to move the patient.
 - The number of team members is dependent of the type of technology used.

How many of our patients weigh >157 lbs.?

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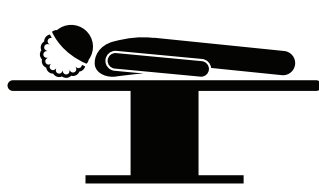
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Dos and Don'ts of Positioning ^{2,33}

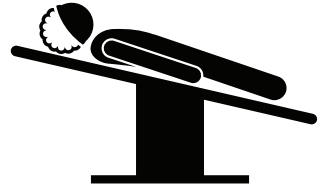
DO NOT

Surgical Positions & Skin Bundles^{3,33}

SURGICAL POSITIONS



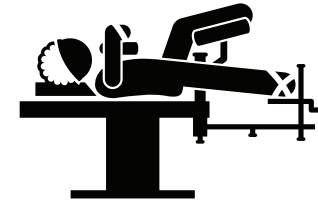
Supine Position



Trendelenburg Position



Reverse Trendelenburg Position



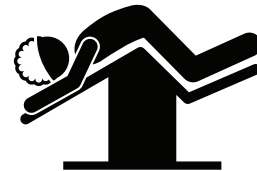
Fracture Table Position



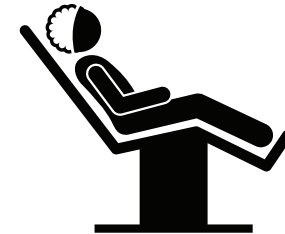
Lithotomy Position



Prone Position



Jackknife Position



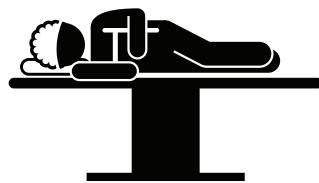
Fowler's Position



Knee-Chest Position



Kidney Position



Lateral Position

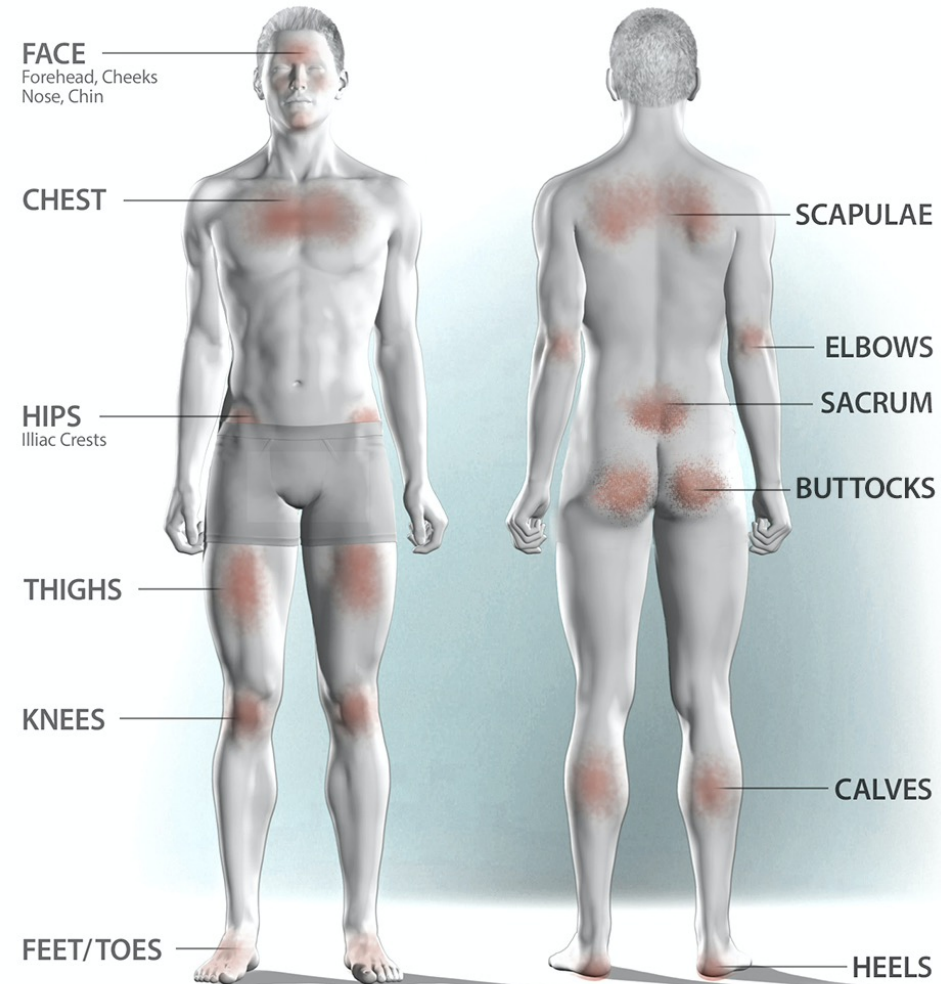


Wilson Frame Position

3. *Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline.* 3rd ed. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel (NPIAP), and Pan Pacific Pressure Injury Alliance; 2019.

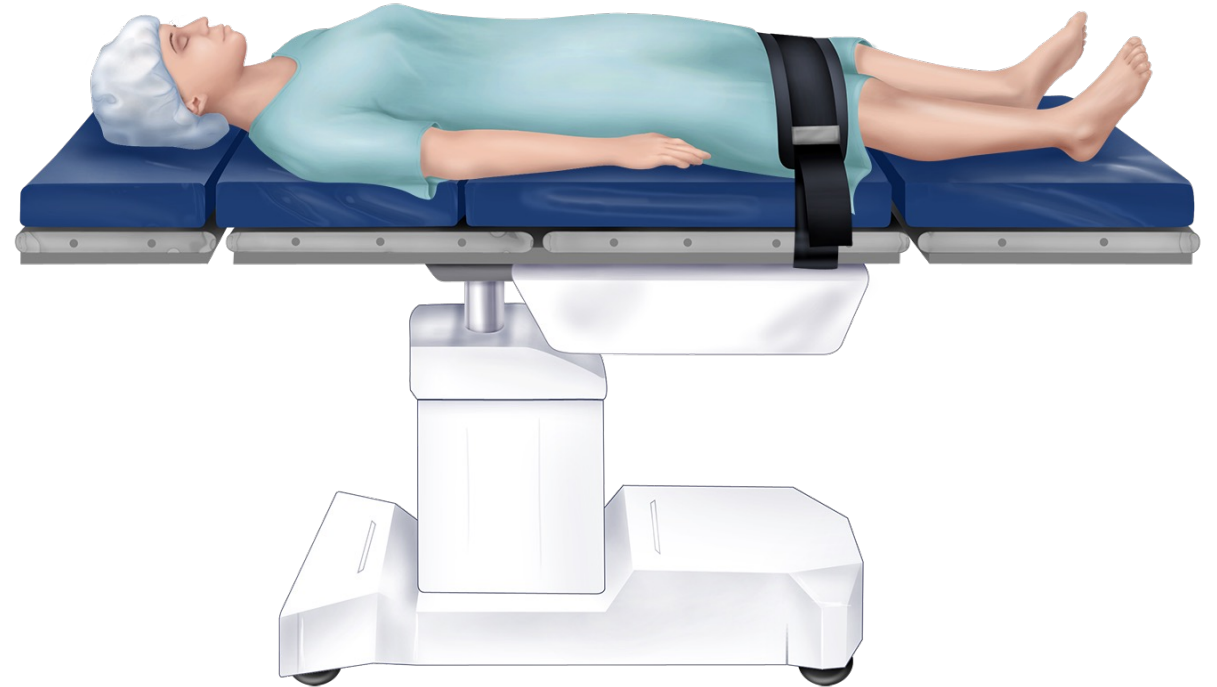
33. Guideline for positioning the patient. In: *Guidelines for Perioperative Practice.* Denver, CO: AORN, Inc; 2023:701-750.

High risk pressure points ³



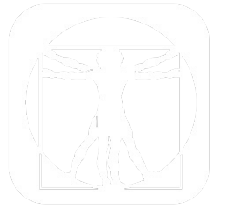
Supine position²

- Occiput
- Scapulae
- Arms
- Elbows
- Thoracic vertebrae
- Lumbar area
- Sacrum/coccyx
- Buttocks
- Heels



Prone position²

- Forehead, eyes, ears, and chin
- Chest/breasts, ports, implants
- Lower costal margins
- Iliac crest
- Genitalia
- Knees
- Shins
- Dorsum of the feet
- Toes



Prone position risks³³

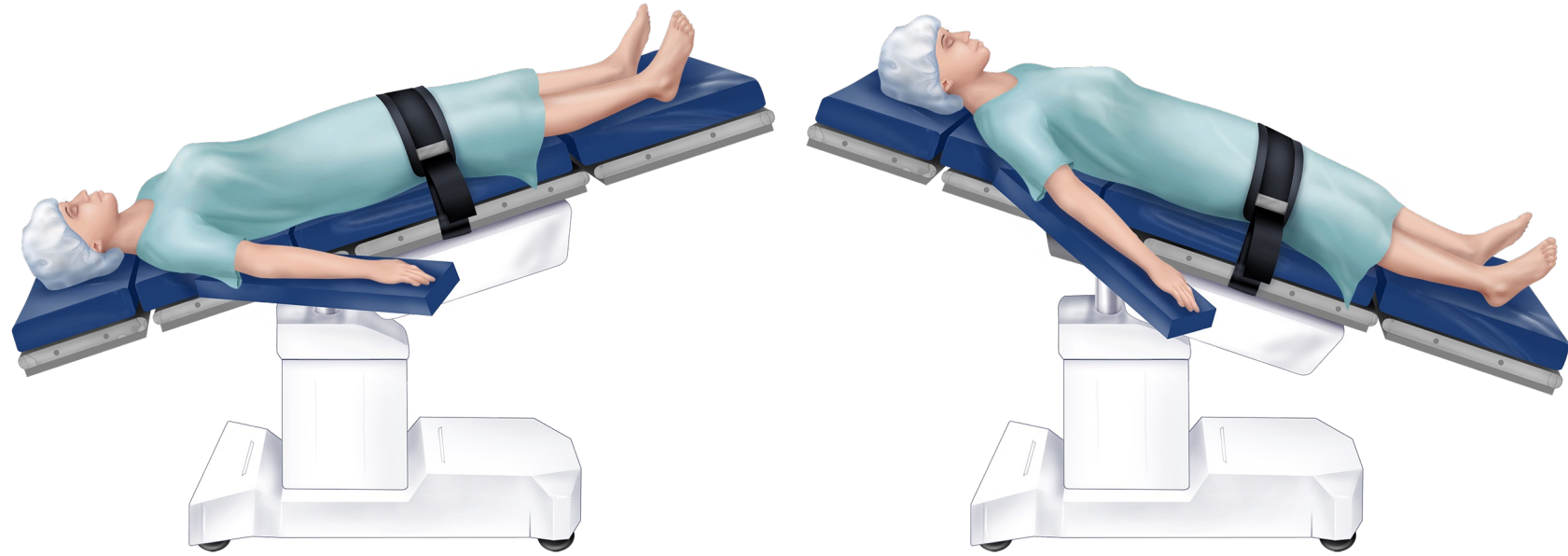
- Pressure injury
- Increased intraocular pressure - Blindness
- Increased intra-abdominal pressure
- Cardiovascular changes
- Venous air embolism
- Respiratory changes
- Injury to the caregiver

- Do not use Wilson Frame
- Face, chin and forehead highest risk



Trendelenburg and reverse Trendelenburg position²

- Occiput
- Scapulae
- Elbows
- Arms
- Thoracic vertebrae
- Lumbar spine
- Buttocks
- Sacrum/coccyx
- Heels



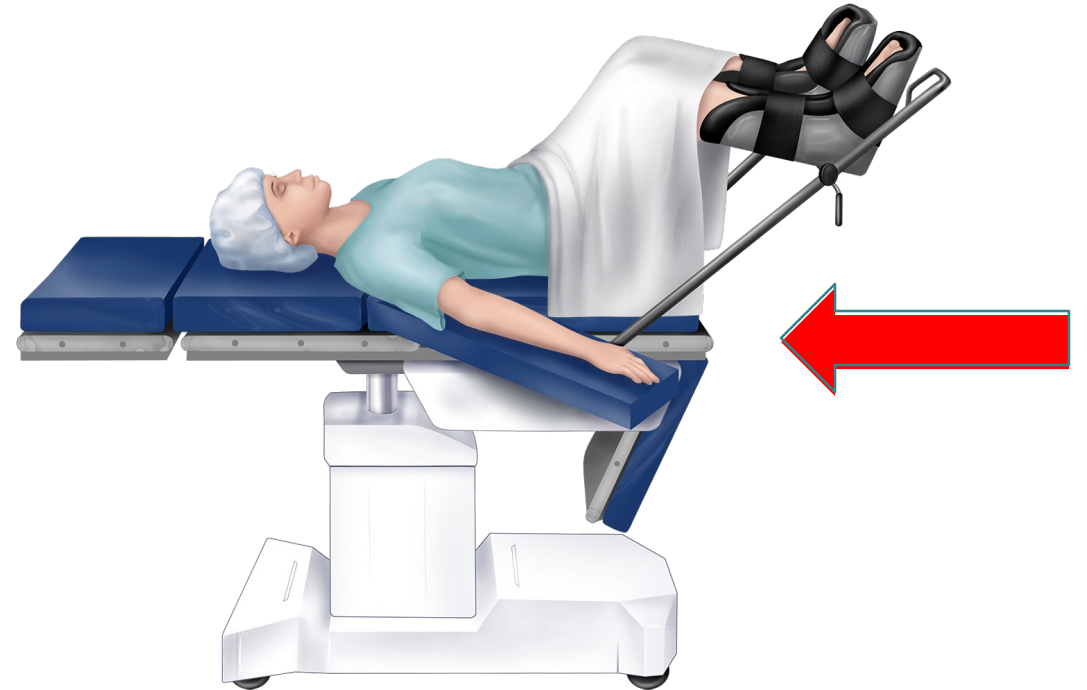
Trendelenburg position – risks³³

- Pressure Injury
- Brachial Plexus Nerve Injury
- Cephalad sliding “toward the head”
- Hemodynamic changes
- Altered pulmonary function
- Retinal detachment – Blindness
- Patient Falls
 - Patient harm, brain damage, paralysis and death
 - Malpractice claims
 - CMS lost reimbursement
 - Reasonably preventable!



Lithotomy position²

- Occiput
- Shoulders
- Scapulae
- Elbows
- Arms
- Thoracic vertebrae
- Lumbar spine
- Buttocks
- Sacrum/coccyx
- Lateral aspect of thighs
- Heels



Lateral position²

- Side of face and ear
- Shoulder
- Arms
- Dependent axilla
- Dependent hip
- Dependent knee
- Ankles
- Feet



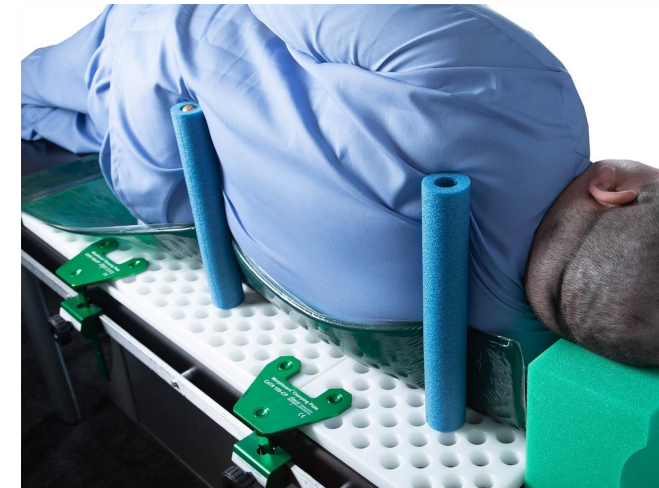
Sitting position pressure points²

- Occiput
- Scapulae
- Ischial tuberosities
- Back of knees
- Heels



High risk medical devices

- Anesthesia devices³³
- Face plates in prone position³³
- External fixators
- Urinary catheters & tubing^{2,3}
- Vacuum-packed positioning device²
- Peg Boards³
- Mayo stands on the toes³³
- Safety straps³³
- Compression stockings



2. Guideline for prevention of perioperative pressure injury. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:751-776.

3. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline. 3rd ed. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel (NPIAP), and Pan Pacific Pressure Injury Alliance; 2019.

33. Guideline for positioning the patient. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:701-750.

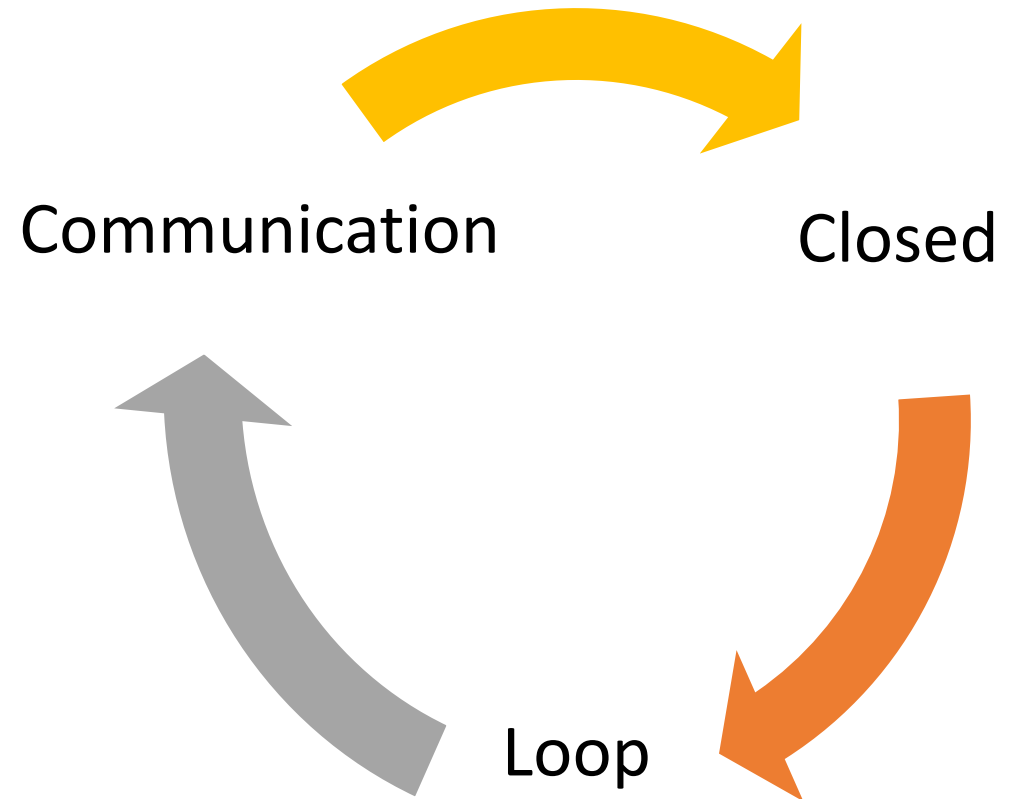
Case Study Avoidable or Non-Avoidable?

- 47 y/o scheduled for bilateral total knee arthroplasty
 - BMI 59
 - Multiple co-morbid conditions, ASA Score 3
 - Surgical cases scheduled concurrently for 3.38 hrs.
- OR table pad supports 500 lbs., standard pad on table.
- Routine positioning practices per anesthesia i.e. blanket roll to keep knee in alignment.
- RESULT
 - Post op day one: Significant pain in sacral area with discoloration noted.
 - HAPI Stage IV



Hand-over communication³⁹

- Standardized hand-over tools, checklists, protocols
- Briefing
- Time Out
- Debriefing
- Education e.g. Team Training



Communication tools “I-PASS”³⁶



Illness Severity

Patient Summary: Surgical Procedure³⁵

- Risk and skin assessments
- Type of surgery, position, time on table

Action List: Consult WOC Nurse, Recheck sacral area in 1 hour

Situational Awareness and Contingency Plan

Synthesis by Receiver

35. Guideline for team communication. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:1155-1183.

36. Starmer A, Schnock K, Lyons A, et al Effects of the I-PASS Nursing Handoff Bundle on communication quality and workflow *BMJ Quality & Safety* 2017;26:949-957.

Post-op assessment

Document the following

- Pre and postoperative skin and risk assessments²
- Team members³³
- Patient position³³
- Extremity position³³
- Specific actions to prevent injury^{2,33}
- Type and location of devices³³



2. Guideline for prevention of perioperative pressure injury. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:751-776.

33. Guideline for positioning the patient. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2023:701-750.

Pediatric patients²

- Pediatric risk assessment tool
- Skin assessment
- PI prevention bundle
- Support surfaces
- Reposition head Q2Hr



Quality initiatives

Root cause analysis and action (RCA²)³⁷



What
happened?

Why did it
happen?

How to prevent
it from
happening
again?

High reliability principles³⁸

- Deference to expertise
 - Team member insight
- Reluctance to simplify
 - A-3
- Sensitivity to operations
 - Cost/Inventory
 - Computer based interventions
- Commitment to resilience
 - Continued support and education
- Preoccupation with failure
 - Constant re-evaluation





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 AORN | LIVE EVENTS

REGIONAL CONFERENCE

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