Pressure Ulcer Prevention: More than Turning and Beds

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Beyond the usual

- Classically, pressure ulcer prevention is
  - Turning every 2 hours
  - Keeping the skin clean and dry

- However, nutritional status of the patient influences the tolerance of the skin for pressure
Screen and assess the nutritional status of every individual at risk of pressure ulcers in each health care setting

Protein calorie malnutrition is common in patients with ulcers

- Develop a policy and protocol for nutritional assessment
  - Consider *Malnutrition Universal Screening Tool* or mini nutritional assessment
Nutritional support

- Provide nutritional support for nutritional risk
  - Begins with assessment
  - Estimation of nutritional needs
    - Can your nurses do this?
  - Provide nutrition
    - Develop “feeding teams” to assist patients who can eat---but don’t
    - How often is tube feeding stopped for meds, therapy, treatments?
      - Change the method? Provide 4 hours off each day?
  - Monitor outcomes
    - Are weights accurate?
      - Are changes in weight followed up?
Risk factor: malnutrition

- Adequate intake of protein, carbohydrate and fluids
  - keeps the skin healthy
  - able to withstand pressure

- When protein intake is low
  - Tissues become edematous
  - Cannot tolerate pressure
Nutrition Subscale = 3

- Offer oral supplements to diet
- Give meds with supplements
  - Give meds one at a time
- Monitor weights daily and assess trends in weights
  - Weigh on scale, don’t ask patient what they weigh
- Do not consider obese patients well fed
  - Multiple fad diets are common
- Do not start a diet during illness
Nutrition Subscale = 2

- Dietary consultation
  - Do this early, not late
  - Get MD to approve of their recommendations

- Check albumin, prealbumin, hemoglobin, BUN
  - Inflammation lowers serum proteins, so don’t rely totally on them

- Assess condition of mouth and ability to swallow
  - Control pain
  - Check fit of dentures

- Monitor oral intake, consider calorie count
Nutrition Subscale = 1

- Consider tube feeding or hyperalimentation
  - Don’t wait past 72 hours to feed
  - Use gut if working
- Consider end of life requests
  - Validate that prior decisions still apply
Pressure Ulcers and the Emergency Department
About 15% of ED visits are by elders
  ◦ More than 40% of them are admitted
  ◦ About 6% are admitted to ICU

Elders in ED
  ◦ Often do not have typical presentations of disease
  ◦ Stay longer for more diagnostic tests
    • Often over 3 hours, can be over 24 hours
  ◦ Are often cognitively impaired

How does this profile factor in to the pressure ulcer problem?
  ◦ Could a pressure ulcer start in the ED?
Profile of Spinal Cord Injured in ED

- Immobilized to Back Boards with Neck Collars until C-spine injury ruled out
  - Pressures on unpadded spinal board $>95\text{mmHg}$ (Sheerin, 2007)
  - Neck collars create occipital pressure
  - Additional risk if paralyzed or sedated
Prediction of Pressure Ulcers in ED

The usual factors

- Cognition or Sensation Impairments
  - Is the patient able to sense pressure?
- Immobility
  - Was the patient mobile before admission?
  - Is the patient allowed to be mobile in ER?
- Inactivity
  - Was the patient up before admission?
- Malnutrition
  - When was the last meal? Was it substantive?
- Moist Skin
  - Is the patient incontinent? Does skin smell of urine?
- Shear
  - Does the patient have to sit up to breathe? Slide down the cart?
Prevention of Pressure Ulcers in ED

- Usual surfaces of carts and chairs are not pressure redistributing
- If cart has over 4 inches of foam as the mattress, there is some pressure redistribution
- What happens when HOB is elevated?
Bedside chairs

- Are not designed for pressure redistribution
- Need a seat cushion
- Patient needs repositioning hourly if not moving or restrained
Prevent Shear Injury for Intubated Patients

- Place foam dressing on sacrum after intubation
- When HOB up, shear forces are intense on sacrum
  - Layered silicone foam has been shown to reduce pressure ulcers
    - Santamaria, 2013
    - Kawoles, 2013
Bed Selection and Procurement in ED

- If patient’s admission is delayed
  - Place patient in hospital bed
  - Undress patient and place in hospital gown
    - Full examination to find ulcers
    - Documentation of ulcers “present on admission”
  - Consider a dedicated area for patients being admitted

- Consider size and girth of patient
  - If over 250 lbs may not fit standard hospital bed
  - Place in bariatric bed at onset
Diagnosis of Ulcers Present on Admission

- Examine all patients at risk for pressure ulcers upon ER admission
  - Institutionalized patients with changes in mental status
  - Institutionalized patients with chronic neurological diseases
  - Patients being seen for difficulty with swallowing or PEG tube problems
  - Patients with a working diagnosis of sepsis
  - Patients from home settings who appear to have been neglected
When an ulcer is present....

- Describe it fully
  - Stage
  - Size (even if crude measurement)
  - Location on body
    - Be exact, do not just record “buttocks decube”
  - Wound bed appearance
    - Dressings must be removed
  - Odor from wound
  - Nature of drainage from ulcer

- The complete description of the ulcer will allow experts to establish a time frame of when it developed
Secure the right bed
  ◦ Low air loss
  ◦ Get the patient off of the ulcer
    • Turn onto side

Get the heels off of the surface

Include prealbumin in labs

If patient is not a DNR
  ◦ Start the antibiotics
  ◦ Get a surgical consult

Advise the family that the ulcer was severely deteriorated at the item of admission
Where is the ulcer?
What are its characteristics?
What immediate care will be needed?
  ◦ Debridement?
  ◦ Pain management?
  ◦ Support surface?
The ulcer should not go unrecognized until after admission
Today, ulcers that start in ER due to long delays in admission can be counted as “present on admission”

This may allow the ED to disengage

However, DTI pressure ulcers that begin ED will not be visible for 48 hours

- Will be more difficult to prove that they started before admission
Pressure Ulcers in the Operating Room
Patients with ulcers on admission to OR rising (0–10.3%) (Ganos, 2013)

Every 30 minutes in the OR after 4 hours increased risk by 33% (Schoonhoven, 2002)
The risk in OR

- 3344 surgical patients
- PrU developed
  - Older, *low BMI patients*
  - *Time in OR*
  - *Admission Braden score*
  - History of diabetes
  - *Number of vasopressors*
  - *APR DRG score*
  - *Number of operations*

- Meta-analysis on predictive validity of Braden (He, 2012)
  - 3 studies of 609 pts
  - Predictive validity low

Tschannen, 2012
* Significant in logistic regression
Determining Risk

- Risk for OR ulcers may not be obvious
  - Braden may be 23 at admission
  - Once anesthetized, Braden may be 6

- Profile of pressure ulcers that began in OR
  - Surgery over 3 hours
  - Hypotension
  - Use of Cardiopulmonary Bypass
  - ASA score
  - Type of surface on OR bed
  - Lithotomy or prone position
Prior to surgery

- Assess the skin that will be at risk during the operation and recovery
  - Sacrum and buttocks most common
  - Examine heels when patient is undressed
- Protect vulnerable skin with dressings
- Notify OR staff that pressure ulcer or any open wound is already present prior to surgery
- Document those wounds as “present on admission”
Reducing risk in OR

- Foam or gel table pad
- Pressure point padding and heel elevation
- Composite silicone dressings on sacrum
- Prevent prep solutions from pooling
OR acquired ulcers

- Determining what is “an OR acquired ulcer”
  - Seldom visible at end of case
    - Cautery and prep solution burns visible early
- Pressure ulcer in loaded body area during case
  - Need to know position for surgery
- Communication between OR and unit staff about ulcer

This burn occurred in the OR; visible at end of case

Prep solution burn
Root cause analysis to find OR acquired ulcers

- Examine high risk patients for ulcers for 48 hours following surgery
- Compare the pressure ulcer location to the location of pressure during the case
  - Prone case = pressure ulcers on knees, hips, ribs, forehead
  - Lithotomy case = pressure ulcers on lower sacrum and buttocks
  - Prone case = pressure ulcers on buttocks tissue (not sacrum, unless very thin patient)
- Talk with OR staff, be certain it was not acquired post operatively
Pressure Ulcer Prevention is Everyone’s Responsibility