Prevention & Treatment of Pressure Ulcers

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- Board Certified:
  - Physical Medicine Rehabilitation
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- Certified Wound Specialist Physician (CWSP)
- CEO of Florida Wound Care Doctors
- The ONLY medical group in Central Florida to specialize in wound care and hyperbaric medicine on a full-time basis
- Medical Director:
  - Osceola Regional Medical Center Wound Healing Center
  - Wound Healing Center at ORMC/Lucerne
- Practicing wound care exclusively for 15 years.

Pressure Ulcers
An area of local necrosis due to vascular insufficiency in an area under pressure
Pressure Ulcers

- Assessment of risk
- Removal of causative factors
  - Pressure
  - Shear
  - Friction
  - Nutrition
  - Oxygenation
  - Incontinence

Shear:
- Tissue rubbing against tissue: causes undermined, deep wounds

Prevention:
- Proper positioning in bed & chair
- Keep HOB below 30 degrees (when medically feasible)

Pressure:
- Shearing forces stretch or tear the blood vessels, reducing the amount of pressure needed to occluded them.

Reduce/Eliminate Shear
Reduce/Eliminate Friction

Friction:
- Skin moves across a surface; skin is rough & red; wound superficial

Prevention:
- Lifting devices
- Proper positioning
- Topical dressings (film, ointments, etc.)

Manage the Effects of Moisture

Broad Generalization

- Stage I and II - caused by friction, moisture or combination
- Stages III and IV - caused by pressure, shear or combination
Who Should Stage?

- Requires good understanding of anatomy and differential diagnosis
- Must be sure it is a PU
- Able to accurately identify anatomical location
- Assign stage based on tissue loss
- Stage III most difficult
- Most knowledgeable person
- Others can describe what is seen

Category/Stage I: Nonblanchable Erythema

- Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area.
- The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Category/Stage I may be difficult to detect in individuals with dark skin tones. May indicate “at risk” persons (a heralding sign of risk).
Category/Stage II: Partial Thickness Skin Loss

- Partial thickness loss of dermis presenting as a shallow open ulcer with a pink red wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister.
- Presents as a shiny or dry shallow ulcer without slough or bruising.* This Category/Stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or erosion.

Category/Stage III: Full Thickness Skin Loss

- Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.
- The depth of a Category/Stage III pressure ulcer varies by anatomical location:
  - The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and Category/Stage III ulcers can be shallow.
  - In contrast, areas of significant adiposity can develop extremely deep Category/Stage III pressure ulcers. Bone/tendon is not visible or directly palpable.
Category/Stage III: Full Thickness Skin Loss

Category/Stage IV: Full Thickness Tissue Loss

- Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunneling.
- The depth of a Category/Stage IV pressure ulcer varies by anatomical location:
  - The bridge of the nose, ear, occiput, and malleolus do not have subcubatae tissue and these ulcers can be shallow.
  - Category/Stage IV ulcers can extend into muscle and/or supporting structures (e.g., fascia, tendon or joint capsule) making osteomyelitis possible. Exposed bone/tendon is visible or directly palpable.
Unstageable: Depth Unknown

- Full thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, gray, green or brown) and/or eschar (tan, brown or black) in the wound bed.
- Until enough slough and/or eschar is removed to expose the base of the wound, the true depth, and therefore the Category/Stage, cannot be determined. Stable (dry, adherent, intact without erythema or fluctuance) eschar on the heels serves as "the body's natural (biological) cover and should not be removed.

Suspected Deep Tissue Injury: Depth Unknown

- Purple or maroon localized area of discolored intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.
- Deep tissue injury may be difficult to detect in individuals with dark skin tones. Evolution may include a thin blister over a dark wound bed. The wound may further evolve and become covered by thin eschar. Evolution may be rapid exposing additional layers of tissue even with optimal treatment.
Suspected Deep Tissue Injury: Depth Unknown

Facility Acquired Pressure Ulcers

- Avoidable vs unavoidable
- Facilities expend a significant resources in prevention and treating pressure ulcer
- Source of litigation
- Providers are not immune from liability

NPUAP Consensus Statement

- Pressure Ulcers: Avoidable or Unavoidable?
- Black et al Ostomy, Wound Management 2010
  - Conditions
    - Hemodynamics instability that is worsened with movement
    - Nutrition/hydration status where advanced directives preclude artificial nutrition/hydration
    - Non-compliance
    - Other organizations have included terminal illness (SCALE), medical devices
CMS Definition of Unavoidable Pressure Ulcer

The person receiving care developed a pressure ulcer even though the provider of the care had evaluated the persons clinical condition and the pressure ulcer risk factors; planned and implemented interventions that are consistent with the persons needs and goals; and recognized standards of practice; monitored and evaluated the impact of the interventions; and revised the approaches as appropriate; or the individual refused to adhere to prevention strategies in spite of education of the consequences of non-adherence

Keys to Remember

- At each facility the most important skin exam is on admission as well as discharge.
- Care plans need to be demonstrated early on during the stay.
- Documentation regarding turning/repositioning is important.
- If ulcer deteriorates, you need to detail all preventative measures have been provided.
- Understand formulary at your facility.

Keys to Remember

- As a provider, you need to document that you have examined the wound.
- As a provider, it is important to document if the ulcer is infected.
- As a provider, it is important to communicate with family members.
- If the ulcer(s) deteriorate, need to understand the limitations of caring for patient at your facility.
- You can only get in trouble if you miss infection, poor perfusion or cancer.
Interdisciplinary Approach to Pressure Ulcer Prevention
Charlene A. Demers
GNP-BC, CWOCN

Scope of the Issue

Cost
• $9 billion to $11 billion
• $20,000-$150,000 per ulcer

Incidence
• Home care – 17 percent
• Acute care – 38 percent
• Long Term Care – 24 percent

Why Team Approach?
• Institute of Medicine
  – Need for high functioning teams to address today’s complex healthcare needs
• World Health Organization
  – Bringing together the skills of different individuals will strengthen the health care system and lead to improved outcomes
Why Team Approach?

• National Pressure Ulcer Advisory Panel
  – Nutrition, mobilization, medical devices
• American Medical Directors Association
  – An interdisciplinary team may help to ensure implementation of a consistent and appropriate process for pressure ulcer prevention

Making Teams Work

• Link to facility leadership
• Members with necessary expertise
• Clearly defined roles and responsibilities
• Access to resources needed to perform role

Making Teams Work

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Making Teams Work

• Familiarity with services of other team members
• Communication structures to facilitate interdisciplinary communication
• Clearly established referral mechanism
• **Communication is paramount!**

Team Referral and Communication

• **Who? When?**
  • Braden score 18? 12?
  • Braden sub-scores?
    – Nutrition, mobility, activity scores
  • PO intake? Lab values?
  • Compromised skin integrity?

Clinical Team Roles

• Physician, NP, PA
• Nursing Staff
• Rehabilitation Therapists
• Nutritional Services
• Pharmacy
Physician, Nurse Practitioner, Physician Assistant

- Supervision of overall clinical care
- Ordering of pressure redistribution surfaces
- Modify or stabilize risk factors
  - Pain
  - Edema
  - Dysphagia
  - Spasticity
  - Incontinence
  - Poor perfusion and oxygenation

Physician, Nurse Practitioner, Physician Assistant

- National Pressure Ulcer Advisory Panel
  - "Use a high specification reactive foam mattress rather than a non-high specification reactive foam mattress for all individuals assessed as being at risk for pressure ulcer development." (Strength of Evidence = A)
  - "Use an active support surface (overlay or mattress) for individuals at higher risk of pressure ulcer development when frequent manual repositioning is not possible." (Strength of Evidence = B)
  - "Ensure pressure ulcers are correctly differentiated from other skin injuries, particularly incontinence associated dermatitis or skin tears." (Strength of Evidence = C)

Nursing

- Identifies those at risk and their risk level
- Performs skin assessments and skin inspections
- Initiates a plan of care for prevention
- Evaluates the effectiveness of the interventions
- Modifies interventions and plan of care as needed
Nursing

• National Pressure Ulcer Advisory Panel
  – Conduct risk assessment ASAP but within 8 hours after admission (Strength of Evidence = C)
  – Repeat risk assessment as often as required by the individual’s acuity (Strength of Evidence = C)
  – Conduct reassessment if there is any significant change in individual’s condition (Strength of Evidence = C)


Nursing

• National Pressure Ulcer Advisory Panel – Educate staff on how to conduct skin assessments/inspections (Strength of Evidence = B)
  — Blanchable or nonblanchable
  — Darkly pigmented skin
  — Bony prominences
  — Repositioning
  — “Inspect the skin under and around medical devices at least twice daily for the signs of pressure-related injury on the surrounding tissue.” (Strength of Evidence = C)


Rehabilitation Therapists

• Promote mobility
• Recommend protective and positioning devices
• Assists with seating and positioning
• Ordering durable medical equipment to improve person’s functional status
Rehabilitation Therapists

- National Pressure Ulcer Advisory Panel
  - Avoid slouched position that places pressure and shear on the sacrum and coccyx (Strength of Evidence = C)
  - Avoid use of elevating leg rests if individual has inadequate hamstring length (if inadequate length and elevated leg rests used, pelvis is pulled into sacral sitting posture causing increased pressure on coccyx or sacrum) (Strength of Evidence = C)
  - “Consider the use of electrical stimulation for anatomical locations at risk of pressure ulcer development in spinal cord injury patients.” (Strength of Evidence = C)

Dietitian

- Performs nutritional assessments
- Develops nutritional plan of care
- Monitors and evaluates nutritional goals

American Medical Directors Association

- Research supports an association between malnutrition and pressure ulcer development
- Evidence is weak that specific nutritional interventions beyond meeting basic calorie and protein requirements will prevent ulcers
Dietitian

- National Pressure Ulcer Advisory Panel
  - Follow EB guidelines on nutrition and hydration for individuals at nutritional risk, at risk of pressure ulcers, or have an existing pressure ulcer (Strength of Evidence = C)
  - Although a large amount of research has occurred in the area of nutrition and pressure ulcers, most of the existing evidence base is inconsistent and of low quality due to small sample size and either an unclear or high risk of bias


- Revise, modify, liberalize dietary restrictions when limitations result in decreased food and fluid intake (Strength of Evidence = C)
- Offer high calorie, high protein nutritional supplements in addition to usual diet to those at pressure ulcer risk, if nutritional requirements cannot be met by dietary intake (Strength of Evidence = A)
- Encourage an individual at risk of a pressure ulcer to take vitamin and mineral supplements when diet intake is poor or deficiencies are confirmed or suspected (Strength of Evidence = C)


Pharmacist

- Analyzes medication profile
- Alert clinical staff to possible interactions that might adversely affect the patient
- Medication availability
- Formulary alternatives
Pharmacist

• Collaborates with medical team
• Assist with modifying or stabilization of risk factors
  – Pain control
  – Edema
  – Spasticity
  – Incontinence
• Vitamin and mineral supplements

System Level Roles

• Education
• Informatics
• Quality Management
• Materials Management
System Level Roles

**Education**
- Ongoing staff education
  - Pressure ulcer prevention
  - Evidenced based practice
- Patient and family education

**Informatics**
- Accurate and effective communication
- Assist with set up of systems to promote communication among the team
- Prevention intervention template

**Quality Management**
- Monitor and evaluate pressure ulcer rates
- Data analysis
- Identify patterns and trends
- Initiate performance improvement projects

**Materials Management**
- Promotes safe quality cost effective products
- Provides availability of products and devices
- Prevent medical device related ulcers

**Systems Analysis**
- How can an interdisciplinary team impact a system issue such as high pressure ulcer rates?
Systems Analysis

- Analyze each team member's role in prevention
- Evaluate where a breakdown in the process occurred
  - Most barriers to quality care occur with processes, not individual people
  - Communication—protocol? referral?
  - Equipment, device, or product—available? effective?
- Corrective action plan to prevent further occurrence
  - Improvement will not occur without a change in process, system, or behavior

The Road Map to Quality

- Pressure Ulcer Prevention is Everyone's Job!

References