NATIONAL PRESSURE ULCER ADVISORY PANEL

Title: Pressure Ulcer Treatment: A Competency-based Curriculum

Purpose:

To prepare registered nurses with the minimum competencies for pressure ulcer treatment.

Competencies:

1. Perform a comprehensive assessment of a pressure ulcer which minimally includes:
   Staging
   Measurement of size
   Exudate (drainage)
   Wound bed characteristics
   Pain
   Surrounding skin
   Tunnel/sinus tract/undermining
2. Distinguish pressure ulcers from other wounds or skin disorders
3. Develop a plan of care with the multidisciplinary team based on the individual's goals of therapies.
4. Demonstrate knowledge and skill in performing local wound care including:
   . Debridement
   . Cleansing
   . Dressings
   . Pressure relief
   . Pain control
5. Identify systemic factors that may influence pressure ulcer healing including:
   . Infection
   . Nutrition
   . Tissue tolerance factors
6. Monitor pressure ulcer healing using a valid measuring method
7. Document assessment and intervention strategies.
8. Demonstrate clinical critical thinking by accurately interpreting changes in the pressure ulcer wound that may require a change in treatment.

Content Outline:

Performs a comprehensive assessment of a pressure ulcer which minimally includes: staging, measurement of size, exudate, wound bed characteristics, pain, surrounding skin and tunnel/sinus tract formation

1. Comprehensive assessment of a pressure ulcer includes:
   - A. Staging the ulcer
     1. Classify the stage of a pressure ulcer using standard NPUAP definitions
     2. Identify pressure ulcers that cannot be staged (e.g., eschar covered, purple pressure ulcers)
     3. Staging of recurring pressure ulcers (e.g., a pressure ulcer closed with a flap or graft, reopening of a healed pressure ulcer)
   - B. Measurement of size
     1. Techniques for determining length, width, depth
     2. Distinguishing between healed and unhealed portion of the wound
   - C. Exudate (drainage)
     1. Identify the characteristics of exudate (e.g., purulent, serosanguinous)
     2. Determine the quantity of exudate
     3. Identify the significance of drainage to wound status and treatment plan
   - D. Wound bed characteristics
     1. Identify the types of wound tissue (e.g., slough, necrotic, granulation, epithelial)
     2. List the common pitfalls in distinguishing wound tissue (e.g., tendons, scabs)
   - E. Pain
     1. Assess pain using a population - appropriate scale
     2. Appropriate pain management prior to wound care treatments and/or interventions
   - F. Surrounding skin
     1. Assess for signs of maceration, infection, pressure injury, tape injury
   - G. Tunnel/sinus tract/undermining
     1. Differentiate characteristics of tunneling from sinus tract and undermining
     2. Determine the presence and extent of tunneling, sinus tract, and undermining in a pressure ulcer
     3. Describe modifications in local treatment if tunnels/sinus tracts are present
     4. State the significance of undermining.

Distinguish pressure ulcers from other wounds or skin disorders

2. Distinguish pressure ulcers from other wounds or skin disorders
   A. Definition of a pressure ulcer
   B. Characteristics of a pressure ulcer
   C. Clinical signs and symptoms that distinguish pressure ulcers from other chronic wounds such as vascular ulcers

Develop a plan of care in conjunction with the multidisciplinary team based on the individual's goals of therapies.

3. Development of a plan of care
   A. Involve multidisciplinary team in developing plan of treatment
   B. Determine what aspects of patient care will be delegated to each member of the multidisciplinary team.
   C. Consider overall goals for patient when developing interventions
   D. Communicate and evaluate plan of care

Demonstrate knowledge and skill in performing local wound care including: debridement, cleansing, dressings, pressure relief, and pain control.

4. Local wound care technique
   A. Debridement
      1. List the indications for debridement (type of tissue in wound)
      2. Describe the method(s) of debridement (conservative, sharp, enzymatic, autolytic, mechanical)
      3. Match wound bed and patient goals to debridement (e.g., dry eschar on heels should not be debrided)
   B. Cleansing
      1. State the purpose – remove nonadherent debris
      2. State the frequency – with each dressing change
      3. Describe the type of solution – noncytotoxic
      4. Describe the method of cleansing – delivery system
         a. Irrigation – within range of 5 – 15 psi
         b. Cleansing with moistened gauze
   C. Dressings
      1. List the purpose of dressings (protection, absorption of exudate, insulation, etc.)
      2. Identify selection criteria based on wound characteristics or match wound needs to dressing purpose
         a. Wound location
         b. Tissue type
         c. Phase of wound healing
         d. Amount of exudate

3. Differentiate types of dressings by categories (transparent film, hydrocolloid, alginates, gauze, hydrogels, foam, specialty/composite) using the following criteria
    a. Functions
    b. Application technique
    c. Frequency of dressing change
    d. Advantages & disadvantages

D. Manage tissue load
1. Select and use of support surfaces
    a. Proper positioning to off set load (e.g., sitting, lying, height of bed)
    b. Transferring from one position to another (e.g., bed to chair, supine to lateral
    c. Avoid positioning on the ulcer
    d. Frequency of repositioning
    e. Avoid using donuts
    f. Indications for use of various types of support surfaces (static, dynamic, low air loss, air fluidized, specialty beds, gel cushions etc.)
    g. Safe application and maintenance of various types of support surfaces

E. Pain management
1. Use appropriate measures to control procedural versus background pain.
2. Provide routine pain management interventions in relation to patient discomfort.

Identify systemic factors that may influence pressure ulcer healing including infection, nutrition, and tissue tolerance factors.

5. Systemic factors that may influence pressure ulcer healing

A. Infection
1. Describe signs and symptoms of localized wound infection
2. Discuss modifications in local wound strategies in response to signs and symptoms
3. Discuss the pros and cons of routine culturing with surface swabs
4. Identify complications of wound infection

B. Nutritional Interventions
1. Identification of clinical signs of malnutrition (e.g., physical, unintentional weight loss & lab data)
2. List factors to consider when developing a nutritional plan (e.g., goals of therapy)
3. Describe supplementation (vitamins, minerals, calories, protein, fluids) and feeding strategies

. C. Tissue tolerance factors
1. Monitor glucose level
2. Evaluate vascular status
3. Monitor edema and sensation

Monitor pressure ulcer healing using a valid measuring method

6. Monitor pressure ulcer healing
    A. Identify tools commonly used clinically for monitoring pressure ulcer healing
        1. PSST
        2. PUSH
    B. Describe characteristics of each tool (components & usage)
    C. Discuss strengths and limitations of each tool in relation to various settings and populations

Document assessment and intervention strategies.

7. Document assessment and intervention strategies.
    A. Document wound characteristics
    B. Document patient wound responses to treatment plan
    C. Feedback to patient and significant others about wound care plan and wound progress
    D. Frequency of wound care documentation

Demonstrate clinical critical thinking by accurately interpreting changes in the pressure ulcer wound that may impact on treatment.

8. Demonstrate clinical critical thinking by accurately interpreting changes in the pressure ulcer and the patient as a whole that may impact on treatment.
    A. Case studies to demonstrate mastery of content
    B. Identification of patient triggers that require changes in plan of care

CASE STUDY- TREATMENT OF PRESSURE ULCERS

M.O. is an 82 year old female Caucasian with left sided hemiplegia secondary to a right sided Cerebral Vascular Accident. She is responsive to her name but does not initiate conversation. Responses to questions are frequently inappropriate or incoherent. Since her CVA she has been confined to bed and has been unable to reposition herself. During the acute phase of her CVA she was positioned supine for extended periods of time.

Discharge summary notes at the time of transfer to the long term care facility indicate that M.O. had an open wound over the coccyx that extended through the dermis and subcutaneous tissue exposing the deep fascia. A small area of adherent necrotic tissue covered the floor of the wound and the sides were diffusely covered with granulation tissue. Wound edges were distinct and attached to the wound base. The periwound tissue was pale pink and without evidence of edema, induration or erythema and blanched with digital pressure. Two small, irregular areas of ecchymosis were visible superior and lateral to the wound edges. A moderate amount of thin purulent exudate was draining from the wound. Ruler measurements revealed dimensions of 2.4 cm by 3.0 cm and 1 cm deep. M.O. shows no signs of pain at the ulcer site.

M.O has some difficulty swallowing. At the time of discharge to the LTC facility she was consuming no more than 50% of a mechanical soft diet at any meal with maximum assistance during feeding. Fluids are taken with difficulty and only when offered to her. Her most recent labs are: albumin 3.2 gm/dl., hematocrit 30 and hemoglobin 10.

Questions:

1. What data support that this wound is a pressure ulcer?
2. What stage of pressure ulcer is this wound?
3. What local treatments to the wound are indicated to promote healing of this pressure ulcer at this time?
4. Beyond local wound care, how might other members of the multidisciplinary team contribute to creating an optimum environment for healing?

The wound is sharp debrided to remove all necrotic tissue one week after admission to the long term care facility. Moist wound healing is promoted with application of hydrogel to the wound surface and covering with gauze. M.O. continues to have difficulty swallowing and her intake ranges from 25 to 50 percent of each meal. Oral nutritional supplements recommended by the Registered Dietitian are being taken in small amounts. Speech therapy evaluation concludes that the limitations in swallowing will continue to limit M.O.'s intake even with maximum assistance and use of special feeding techniques. A team meeting was held with the patient's family and the decision was made to have a PEG tube placed for feeding. This procedure was done as an outpatient on the eighteenth day after admission to the LTC facility. The Registered Dietitian conducts a nutritional assessment and recommends a tube feeding to meet M.O.'s needs for increased calories, protein and fluids. The tube feeding is initiated using a high nutrient tube feeding formula.

Following are the results of wound assessments over the course of the wound.

M.O.'s Wound Assessments

Week #	Leng	Width	Depth	Necrotic	Granu	Ex Amt	Ex Type
Admit	2.4	3.0	1.0	50%	25%	Mod	Purulent
1	2.4	3.0	1.3	0%	25%	Mod	Purulent
2	2.4	3.0	1.3	0	50%	Mod	Purulent
3	2.2	2.9	1.1	0	100%	Mod	Purulent
4	2.1	2.8	0.8	0	100%	Small	Purulent
5	1.9	2.7	0.5	0	100%	Small	Purulent
6	1.5	2.4	0.2	0	100%	Small	Purulent
7	1.1	1.2	----	0	100%	Small	Serous
8	.6	0.7	----	0	100%	Scant	Serous
9	.3	0.4	----	0	100%	Scant	Serous
10	0	0		0	0	0	0

Questions:

5. Why did the wound depth increase between admission and the Week #1 assessment?
6. Based on the above assessments, what adjustments in treatment are indicated over the course of therapy?
7. In addition to the wound assessments provided, what other assessments would need to be done on an ongoing basis?
8. Using the wound assessments provided, apply the PUSH Tool (you can download the tool from the NPUAP website) to monitoring healing of this wound.

Answers:

1. The hospital report of being confined to bed, unable to reposition and spending extended periods of time supine supported the presence of the etiologic factor of unrelieved pressure and hemiplegia with some decrease in sensation.

2. The clinical evidence of full thickness tissue loss extending to the deep fascia suggests that this is at least a Stage III pressure ulcer. However, this ulcer cannot be staged accurately until the necrotic tissue in the floor of the wound is removed, since the level of injury may be deeper beneath the necrotic eschar.

3. The first priority of treatment is removal of the necrotic tissue.
    a. Debridement of the necrotic tissue could be accomplished by several methods. If speed is of the essence (e.g., if the patient has signs and symptoms of infection) sharp debridement is the preferred methods. This must be performed by skilled personnel and should be followed with a continuously moist dressing such as a hydrogel and gauze or an alginate. In the absence of these considerations, alternative methods may be used, including autolytic debridement and enzymatic debribement could be used to facilitate removal of the necrotic tissue. The autolytic method could be accomplished with a type of dressing that retains wound fluid on the wound bed. The enzymatic method requires that a chemical enzyme be applied to the wound surface and covered with a moist dressing. Following debridement of the necrotic tissue from the wound bed, the ulcer can be staged accurately.
    b. The patient needs to have a support surface on her bed. She needs to be positioned from side to side at least every two hours with bony prominences supported. The supine position should NOT be used in order to avoid pressure on the coccyx. The patient should NOT be up in the chair, since sitting will increase pressure on the wound.
4. The patient's nutritional status must be addressed. A referral to Speech Therapy for evaluation of her difficulty with swallowing is indicated. A Registered Dietitian should be consulted for recommendations on a diet that would provide the increased protein and calories needed for wound healing within the limits of the patient's ability to swallow. The wishes of the family need to be assessed in relation to long term goals and the use of alternative feeding methods (e.g., a PEG tube). The patient should be started on a multivitamin.
5. The increase in depth is the result of the necrotic tissue having been removed by sharp debridement. The true depth of the injury is now able to be assessed.
6. As the wound decreases in depth and the exudate decreases in amount (approximately Week #6), the dressing could be switched to a hydrocolloid. This would require less frequent dressing changes.
7. The patient's nutrition and hydration status needs to be monitored continuously. The skin around the wound needs to be evaluated for signs of inflammation, maceration or injury from adhesive on dressings and tape. The skin (especially the bony prominences) needs to be inspected daily for signs of pressure injury.
8. PUSH Tool Assessments (total score):
    Admit = 14
    Week #1 = 12
    Week #2 = 12
    Week #3 = 11
    Week #4 = 10
    Week #5 = 10
    Week #6 = 9
    Week #7 = 7
    Week #8 = 4
    Week #9 = 3
    Week #10 = 0

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