PRESSURE Ulcers at End of Life

An Overview for Home Care and Hospice Clinicians

Myra Nenna, RN, BN, CHPN, WCC

(AP Photo/Coeur d'Alene Press, Jerome A. Pollos)

PRESSURE ULCERS are often seen in end-of-life patients when care typically focuses on comfort measures. Multiple comorbidities as well as age, malnutrition, compromised mobility, and the patient and family's right to make informed choices about care may present clinicians with significant challenges to prevent or heal these wounds.

Prevention is the best strategy whenever possible, but there are circumstances when unavoidable pressure ulcers may develop. This article introduces clinicians to assessment tools to assist in identifying patients who are at greater risk for developing unavoidable pressure ulcers as well as those whose wounds are unlikely to heal.

Developing agency policy and procedures to reflect a holistic integrated approach to palliative wound management for this population, centered on patient and family goals, can promote quality of life for the patient, while maintaining wound bed stabilization.

Pressure Ulcers: An Overview

Pressure ulcers are defined by The National Pressure Ulcer Advisory Panel as localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction (NPUAP, 2007). Sustained pressure on areas that support the body leads to restricted blood flow, and lack of oxygen eventually leads to

ischemia, cell death, and tissue necrosis of the skin and underlying structures (Pieper, 2007). Pressure ulcers are classified in stages defined by the visible layers of tissue damaged from the surface toward the bone, and in 2007, NPUAP added 2 more stages: deep tissue injury and unstageable (Figure 1).

Incidence and prevalence rates vary by patient population and clinical setting and exact figures are unknown. Surveys performed between 1990 and 2000 found the prevalence of pressure ulcers among the hospice population ranged from 14% to 28% (Cuddigan et al., 2001).

Severe wounds can be significantly more expensive to manage and may require more frequent skilled nursing visits and impose a significant burden on the patient and family, requiring substantial caregiver time. The human cost in pain, suffering, and quality of life is even greater.

Until recently, it was a common misconception that pressure ulcers were preventable with the application of vigilant staff interventions (Ayello & Lyder, 2008). It is now recognized that there are patient circumstances that create unavoidable pressure ulcers. In 2010, NPUAP released a statement defining unavoidable to mean "that the individual developed a pressure ulcer even though the provider had evaluated the individual's clinical condition and pressure ulcer risk factors; defined and implemented interventions that are consistent with individual needs goals and recognized standards of practice; monitored and evaluated the impact of the interventions; and revised the approaches as appropriate."

Interestingly, the Centers for Medicare and Medicaid Services, whose directives are the foundation for the majority of state healthcare regulations, contain new, more detailed wording to define whether a pressure ulcer was avoidable or unavoidable in long-term-care facilities (Stokowski, 2010). There are detailed guidelines for surveyors sent by the State's Department of Health to investigate whether the nursing home is following Federal Regulations for pressure ulcer prevention, treatment, and care planning to determine whether citations should be issued. This can be confusing when a nursing facility is a hospice patient's home. Nursing homes may have protocols in place for positioning, nutritional supplements, sharp or chemical debridement, or

(AP Photo/Coeur d'Alene Press, Jerome A. Pollos)

Figure 1. Pressure ulcer stages revised by NPUAP. Reprinted with permission from NPUAP 2007, http://www.npuap.org/pr2.htm.

Stage I:	Intact skin with nonblanchable 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.
Further description:	The area may be painful, firm, soft, warmer, or cooler as compared with adjacent tissue. Stage I may be difficult to detect in individuals with dark skin tones. May indicate "at risk" persons (a heralding sign of risk)
Stage II:	Partial-thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister.
Further description:	Presents as a shiny or dry shallow ulcer without slough or bruising. * This stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration, or excoriation. *Bruising indicates suspected deep tissue injury
Stage III:	Full-thickness tissue loss. Subcutaneous fat may be visible but bone, tendon, or muscles are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.
Further description:	The depth of a stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput, and malleolus do not have subcutaneous tissue and stage III ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep stage III pressure ulcers. Bone/tendon is not visible or directly palpable.
Stage IV:	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.
Further description:	The depth of a stage IV pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput, and malleolus do not have subcutaneous tissue and these ulcers can be shallow. 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:	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.
Further description:	Until enough slough and/or eschar is removed to expose the base of the wound, the true depth, and therefore 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:	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 with adjacent tissue.
Further description:	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.

Copyright: NPUAP 2007, http://www.npuap.org/pr2.htm.

frequent wound care that may not be comfortable or appropriate for hospice patients. The nursing home and hospice staff must jointly coordinate, establish, and agree upon one plan of care that is consistent with the hospice philosophy of palliative care, and is based on the patient's needs and wishes (Figure 2). Since nursing home staff and attending physicians possess varying knowledge regarding palliative care and end-of-life symptom management, communication and ongoing education on end-of-life care can help ensure the highest quality of life and elimination of unnecessary procedures for hospice patients in the nursing home.

Palliative Care and Holistic Assessment

The World Health Organization defines palliative care as "the active total care of patients whose disease is not responsive to curative treatment. The goal of palliative care is achievement of the best quality of life for patients and their families" (WHO, 2002). Hospice care is only one model of palliative medicine. It is not necessary for a patient to be in a hospice program to receive palliative care.

When palliative care is the guiding philosophy, particular attention is given to the prevention, assessment, and treatment of pain and other symptoms, and to the provision of psychological, spiritual, and emotional support as determined by the patient and family. Within that foundation is the concept that the patient and family define dignity, comfort, and quality of life based on their personal values, cultures, wishes, and needs.

Each step in the care plan process—assessment, goal setting, interventions, and evaluations—involves a collaborative approach that includes a multidisciplinary team and the patient and family.

Within this process, a social worker conducts a psychosocial assessment. This will include an evaluation of lifestyle goals and values, cognitive function, communication ability, learning style, social functioning and support, and spiritual needs. She will also evaluate the patient and family's willingness and ability to adhere to an individualized treatment plan. A nurse evaluates the patient's medical and surgical history, lab results, and medication use. A standardized scale is used to assess pain, including wound-related pain. The patient is evaluated for mobility, physical functioning, and their ability to perform

Figure 2. Nursing Facility Hospice Care

Condition of participation: Hospices that provide hospice care to residents of a facility

Standard: 418.112(b)
Professional management.

The hospice must assume responsibility for professional management of the resident's hospice services provided, in accordance with the hospice plan of care and the hospice conditions of participation, and make any arrangements necessary for hospice-related inpatient care.

Standard: 418.112(d)(2)
The hospice plan of care reflects the participation of the hospice, the SNF/NF or ICF/MR, and the patient and family to the extent possible.

Interpretive Guidelines §418.112(d)(2)

The hospice and the facility must develop a coordinated plan of care for each patient that guides both providers. When a hospice patient is a resident of a facility, that patient's hospice plan of care must be established and maintained in consultation with representatives of the facility and the patient/family (to the extent possible).

Standard: 418.112(f)
Orientation and training of staff.

Hospice staff must assure orientation of SNF/NF or ICF/MR staff furnishing care to hospice patients in the hospice philosophy, including hospice policies and procedures regarding methods of comfort, pain control, symptom management, as well as principles about death and dying, individual responses to death, patient rights, appropriate forms, and record keeping requirements.

Source: State Operations Manual Appendix M - Guidance to Surveyors: Hospice (Rev. 65, 10-01-10). §418.112 Condition of Participation: Hospices that Provide Hospice Care to Residents of a SNF/NF or ICF/MR.
Available at: URL: https://www.cms.gov/manuals/downloads/som107ap_m_hospice.pdf (Accessed March 17, 2011).

Figure 3. Braden Scale for predicting pressure sore risk. Retrieved from http://www.bradenscale.com/braden.PDF. Copyright 1988, Barbara Braden and Nancy Bergstrom.

Patient's Name: _____ Evaluator's Name: _____

Sensory perception Ability to respond meaningfully to pressure-related discomfort	**1. Completely limited:** Unresponsive (does not moan, flinch, or grasp) to painful stimuli, due to diminished level of consciousness or sedation, OR Limited ability to feel pain over most of body surface	**2. Very limited:** Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness, OR Has a sensory impairment that limits the ability to feel pain or discomfort over ½ of body.	
Moisture Degree to which skin is exposed to moisture	**1. Constantly moist:** Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	**2. Moist:** Skin is often but not always moist. Linen must be changed at least once a shift.	
Activity Degree of physical activity	**1. Bedfast:** Confined to bed.	**2. Chairfast:** Ability to walk severely limited or nonexistent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	
Mobility Ability to change and control body position	**1. Completely Immobile:** Does not make even slight changes in body or extremity position without assistance.	**2. Very limited:** Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	
Nutrition Usual food intake pattern	**1. Very poor:** Never eats a complete meal. Rarely eats more than $^1/_3$ of any food offered. Eats two servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement, OR Is NPO[1] and/or maintained on clear liquids or IV[2] for more than 5 days.	**2. Probably inadequate:** Rarely eats a complete meal and generally eats only about ½ of any food offered. Protein intake includes only three servings of meat or dairy products per day. Occasionally will take a dietary supplement, OR Receives less than optimum amount of liquid diet or tube feeding.	
Friction and Shear	**1. Problem:** Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequent slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures, or agitation leads to almost constant friction.	**2. Potential problem:** Moves feebly or requires minimum assistance. During a move, skin probably slides to some extent against sheets, chair, restraints, or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.	

[1] Nothing by mouth [2] Intravenously [3] Total Parenteral Nutrition

Date of Assessment: _____

	3. Slightly limited: Responds to verbal commands but cannot always communicate discomfort or need to be turned, OR Has some sensory impairment that limits ability to feel pain or discomfort in one or two extremities.	**4. No impairment:** Responds to verbal commands. Has no sensory deficit that would limit ability to feel or voice pain or discomfort.			
	3. Occasionally moist: Skin is occasionally moist, requiring an extra linen change approximately once a day.	**4. Rarely moist:** Skin is usually dry; linen requires changing only at routine intervals.			
	3. Walks occasionally: Walks occasionally during day but for very short distances, with or without assistance. Spends majority of each shift in bed or chair.	**4. Walks frequently:** Walks outside the room at least twice a day and inside room at least once every 2 hours during waking hours.			
	3. Slightly limited: Makes frequent though slight changes in body extremity position independently.	**4. No limitations:** Makes major and frequent changes in position without assistance.			
	3. Adequate: Eats over half of most meals. Eats a total of four servings of protein (meat, dairy products) each day. Occasionally will refuse a meal, but will usually take a supplement of offered, OR Is on a tube feeding or TPN[3] regimen, which probably meets most of nutritional needs.	**4. Excellent:** Eats most of every meal. Never refuses a meal. Usually eats a total of four or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.			
	3. No apparent problem: Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair at all times.				
		Total Score			

Figure 4. Agency-recommended interventions by Braden Subcategory. (Courtesy of Myra Nenna, RN, BN, CHPN, WCC, Hunterdon Hospice.)

Choose options based on patient status and subcategory score

Sensory Perception Deficit
- Electric bed
- Specialty overlay or mattress for the bed
- Lift sheet
- Wheelchair/cushion
- Protect and elevate patient heels
- Barrier spray at risk areas—heels, toes, elbows, hips, sacrum
- Repositioning as tolerated, supported with pillows as needed

Moisture
- Toileting schedule if realistic
- Absorbent pads or briefs to wick away moisture
- Incontinence cleanser
- Protective barrier, sprays, ointments, and pastes as needed
- Consider Foley catheter insertion if appropriate

Activity
- Electric bed/ wheelchair/walker/cane
- Specialty overlay or mattress for the bed
- Lift sheet
- Wheelchair/cushion
- Protect and elevate patient heels
- Barrier spray at risk areas—heels, toes, elbows, hips, sacrum
- Repositioning as tolerated, supported with pillows as needed
- Medicate for pain prior to repositioning

Mobility
- Electric bed
- Specialty overlay or mattress for the bed
- Lift sheet
- Wheelchair/cushion
- Protect and elevate patient heels
- Barrier spray at risk areas—heels, toes, elbows, hips, sacrum
- Repositioning as tolerated, supported with pillows as needed

Nutrition
- Mouth Care
- Diet and fluids for comfort as tolerated
- Instruct family to offer frequent small amounts of food and fluids
- Provide supplements between meals as desired
- Covered cups or straws available at patient's side for fluids
- Arrange for assistance with feeding as needed

Friction and Shear
- Electric bed
- APP/specialty mattress to the bed
- Lift sheet
- Wheelchair/cushion
- Protect and elevate patient heels
- Barrier spray at risk areas—heels, toes, elbows, hips, sacrum
- Repositioning as tolerated, supported with pillows as needed

activities of daily living. A system review, physical assessment, and skin inspection for existing pressure ulcers provides information on comorbidities that can place a patient at risk for pressure ulcer development or impaired healing.

A validated risk assessment tool can help clinicians identify factors that place patients at highest risk for pressure ulcers. Although none have been clinically evaluated for the palliative care population, one analysis, after a review of 33 studies of risk assessment scales, found the Braden scale to have the best predictability of pressure ulcer risk and was better than nurse's clinical judgment (Pancorbo-Hidalgo et al., 2006). The Braden scale evaluates patients based on two broad areas: factors that predispose a patient to intense and prolonged pressure and conditions that alter tissue tolerance for pressure (Figure 3).

The clinician rates each subcategory—sensory perception, skin moisture, activity, mobility, nutrition, and friction/shear—objectively and a score ranging from one (completely impaired) to four (no impairment) is assigned. The total score places a patient in a risk category with suggestions for preventative interventions (Braden &

Maklebust, 2005). Per Agency policy, individualized interventions can be made for deficits in subcategories (Figure 4).

Once the clinician has information from the patient assessment, risk assessment, and wound assessment, it is important to educate the patient and family about clinical findings and pressure ulcer risk factors so they have realistic expectations. Open communication as to what to expect as the disease progresses provides an opportunity for discussions about preventative measures, wound care, and options for palliative comfort measures.

With input from the interdisciplinary team, patient, and family, a holistic, individualized care plan can be developed that is consistent with the patient's needs and goals and recognized standards of practice. Risk and skin assessments should be conducted regularly in accordance with agency guidelines. All assessment results and interventions are documented to provide consistency of care, and interventions can be revised as appropriate as the patient and skin or wound change (Ayello et al., 2009).

Assessment of Wound Healing Probability

At end of life, despite prevention strategies, severe illness and multiple system comorbidities that affect circulation, cognitive function, nutritional status, and functional abilities, along with variability in treatment adherence, place patients at increased risk for localized skin breakdown as their disease progresses (Brink et al., 2006). The presence of a wound can have a devastating impact on patient quality of life affecting body image, self-esteem, and independence, causing physical and emotional suffering. For patients nearing end of life, a determination must be made as to whether it is possible to create a clean vascularized wound bed that can progress through the sequential healing stages of tissue repair, a process that with good blood supply and adequate nutrients typically takes 6 weeks (Ayello et al., 2008).

Wound healing is not just a local process, but is interdependent on the functioning of all body systems. Poor circulation and oxygenation, some medications, and malnutrition are associated with delayed healing and tissue breakdown.

The administration of opioids or other sedating medications may inhibit spontaneous movement. A palliative care patient who has pain with movement may prefer to remain in a comfortable position despite the risk of developing a pressure ulcer (Reifsnyder & Magee, 2005).

In a home environment, a caregiver may be unable to carry out preventative measures. Other identified risk factors are dependence on another person for dressing, transferring, toileting, and bathing (Galvin, 2002).

Malnutrition has also been described as a significant factor in determining the risk of tissue breakdown and healing ability (Posthauer & Thomas, 2008). Uncorrected hypoproteinemia, anemia, and inadequate levels of vitamins and minerals contribute to pressure ulcer development and can prevent an existing wound from healing (Fleishman, 2005). Barriers to adequate nutrition in end-of-life patients can include diminished swallowing reflex, anorexia, dependence for feeding, pain, dysphagia, and depression (Kemp, 2006).

Traditional goals of a balanced diet and achieving an ideal weight may not be realistic in end stages of life. At the end of life, the gastrointestinal system fails to absorb food. This can result in the patient's continued weight loss, abnormal lab values, and pressure ulcer development or failure to heal (Cimino, 2003). Families may inquire about artificial nutrition or hydration supplementation to assist with wound healing. Families need to be provided with information about what can be accomplished by tube feeding and whether that goal is reasonable given the patient's prognosis. Studies have not demonstrated that nutritional support through tube feedings prevents development or speeds wound healing (Mathus-Vliegen, 2004).

Many families expect wounds to heal even when healing may not be an appropriate or possible goal. For patients with short life expectancy, inadequate nutrition, and poor tissue perfusion, treatment goals can shift from a primary focus on healing to patient comfort and prevention of complications, reducing pain, managing exudate and odor, and providing for optimal functional capacity (McDonald & Lesage, 2006).

The FRAIL (For Recognition of the Adult Immobilized Life) Healing Probability Assessment Tool was designed to help clinicians identify frail patients with wounds that are unlikely to heal and who would benefit from palliative care. The overall health status of the patient, wound

Figure 5. FRAIL Palliative Wound Care Healing Probability Assessment Tool. From http://www.frailcare.org/projects.htm. Reprinted with permission.

The list below provides the foundation for estimating the probability for any skin wound to successfully respond to aggressive local intervention that seeks to close the wound(s). The more items checked, the less likely that the wound(s) would achieve a sustainable complete closure.

- Wound (s) is over 3 months old, or is a reoccurrence of a preexisting breakdown
- Patient spends 20 or more hours of a day in a dependent position (chair or bed)
- Patient is incontinent of urine
- Patient is incontinent of feces
- Patient has lost >5% of baseline weight, or 10 pounds, in the last 90 days
- Patient does not eat independently
- Patient does not walk independently
- Patient has a history of falls within last 90 days
- Patient is unable/unwilling to avoid placing weight over wound(s) site(s)
- Wound is associated with complications of diabetes mellitus
- Wound is associated with peripheral vascular disease
- Severe chronic obstructive pulmonary disease
- End-stage renal, liver, or heart disease
- Wound is associated with arterial disease
- Patient has diminished range-of-motion status nonresponsive to rehabilitative services
- Patient has diminished level of mental alertness demonstrated by muted communication skills and inability to perform ADLs independently
- Wound is full thickness, with presence of tunneling
- Blood values indicate a low oxygen-carrying capacity
- Blood values indicate an exhausted or decreasing immune capacity (i.e., low lymphocyte count)
- Blood values indicate below-normal visceral protein levels that have not responded to nutritional support efforts (i.e., low prealbumin, transferrin, retinol-binding protein, and albumin)

characteristics, patient functional and nutritional status, family support, comorbidities, and blood values are used as objective measures to determine the probability that a wound will heal in response to aggressive local intervention (FRAIL, 1999) (Figure 5). Identified factors that impede wound healing can be used to educate the family and patient that the wound is a symptom of declining health and not of caregiver or clinician failure.

Wound Management: An Integrated Approach

Using a holistic and integrated approach to care, palliative wound care is based on the same evidence-based principles as traditional wound care. But rather than a goal of wound healing, the goals of palliation are stabilization of existing wounds, prevention of new wounds if possible, and symptom management to improve patient comfort, well-being, and quality of life. Wound healing may be achieved with this approach.

The goal of wound management is to provide interventions that efficiently progress wounds through the biologic sequence of repair or regeneration. Producing a clean and protected wound bed by removing devitalized tissue may ultimately reduce a number of factors that cause distress and poor quality of life (Alvarez et al., 2002). The presence of necrotic tissue within a wound may stimulate inflammation (Vowden & Vowden, 2002) and support the growth of pathological organisms (Ayello et al., 2008). Excessive exudate, a consequence of increased bacterial burden and the breakdown of tissue through tissue death and necrosis, may cause odor and maceration of surrounding tissue and decrease protein stores in an already vulnerable patient (Alvarez et al., 2002).

Strong wound odors can lead to social and physical isolation, altered patient body image and self-worth, and can challenge caregivers. When used topically, metronidazole can eradicate the anaerobes that cause odor (Kalinski et al., 2005). Charcoal dressings applied over the primary dressing are also available, although expensive. These dressings may be reused as long as they remain dry. Baking soda can be applied between dressing layers to help absorb odor. Discreet placement of a pan of charcoal, cat litter, or the cider vinegar or the use of scented candles, air freshener sprays, peppermint and other

essential oils, coffee beans or grounds can be used to hide odors (Patel & Cox-Haley, 2009).

Debridement Considerations

Debridement is a method of treatment used to remove necrotic dead tissue. Reducing the bacterial load in the wound by debridement of moist necrotic tissue from a wound even when healing is not the primary focus can meet palliative wound goals to control pain, manage infection, odor, bleeding, and exudate (Fleck, 2005). Choosing an appropriate method that provides wound stability and comfort can result in improved quality of life for the patient and caregiver (Tice, 2006).

Debridement can be achieved through autolytic, mechanical, chemical, and excisional means. The patient's potential for healing, type and amount of necrotic tissue, absence or presence of infection, and patient tolerance, as well as economic considerations must be used to guide the method selected (Ennis & Menenes, 2005). Each method has potential risks and benefits for the patient. Decision-making discussions with the family must consider palliative goals of care wound management, and benefit versus burden.

Wet-to-dry dressings were a commonly used method of mechanical debridement, and involve covering a wound with a saline-moistened dressing and allowing it to dry and removing it. However, this method requires frequent dressing changes causing caregiver burden, may damage healthy granulation tissue and lead to excessive bleeding and increased pain, and is no longer a recommended treatment (Zacur & Kirsner, 2002). High-pressure irrigation and whirlpool baths debride wounds using water, but these methods may also result in periwound maceration and are not practical for the home setting.

Chemical debridement is the application of topical agents that chemically disrupts or digests devitalized proteins present in the wound (McCallon, 2007). Some products do not differentiate between viable and devitalized tissue and can produce an inflammatory response with an increase in pain. The enzymatic agents must be applied with care and discontinued when the wound is clean. Silver in dressings or detergents will deactivate the enzyme. Enzymes are applied once or twice daily, increasing caregiver burden.

Excisional or sharp debridement is the fastest and most aggressive method and involves using a scalpel, scissors, or curette to cut away devitalized tissue, necrosis, or slough. Sharp debridement performed at the bedside may be seen as more cost-effective and leading to faster healing time in skilled nursing facilities that contract with wound care specialists to provide services (DaVanzo et al., 2010). However, it may not be possible to determine how deeply necrotic tissue extends and sharply debridement to healthy tissue can cause pain, bleeding, and damage (Lee & Turnbull, 2001), and frequent dressing changes may be necessary.

The nursing home and hospice staff must jointly coordinate, establish, and agree upon one plan of care that is consistent with the hospice philosophy of palliative care and is based on the patient's needs and wishes.

Autolytic debridement involves using dressings that maintain moisture within the wound bed supporting the body's own ability to cleanse itself. The enzymes present in wound fluids break down, digest, and liquefy necrotic tissue. Advantages of this method are that it is noninvasive, selective, and takes minimal expertise. Autolytic debridement causes little or no pain.

Debridement can be an essential adjunct in symptom management of nonhealing pressure ulcers. For many palliative patients with short life expectancy and poor healing potential, debridement should be conservative and limited to soft slough (Ayello et al., 2008). Although autolytic debridement is slow, expert clinical opinion indicates that it is an appropriate choice for patients who cannot tolerate other forms of debridement and who are not likely to become infected if their wound is not debrided by other, more rapid means (Clinical Practice Guideline for Treatment of Pressure Ulcers, 1994).

Dressing choices are made based on patient assessment and the goal of therapy. Goals include removing necrotic tissue, protecting the

wound, absorbing drainage, maintaining a moist wound environment, and protecting the surrounding skin. Other considerations are to choose dressings that will minimize wound-related pain and reduce dressing changes. Moisture-retentive dressings such as foams, hydrocolloids, and hydrogels can be left in place for 3 to 5 days, reducing the frequency of dressing changes. Keeping a dressing in place for several days can aide the early healing process by leaving the wound undisturbed, moist, and at body temperature, which provides stability to the wound bed. Caregiver availability and skill, as well as cost and formulary options, can be used to refine dressing choices. Utilizing wound products that minimize pain, odor, and dressing changes helps meet palliative goals of care.

Mrs. J's Story

Mrs. J was a 60-year-old hospice patient with end-stage uterine cancer. Prior treatment included surgery and chemotherapy. Mrs. J had done well until testing revealed recurrent disease that the physician believed would not benefit from further or aggressive treatment. While hospitalized for this evaluation, Mrs. J suffered a stroke, leaving her with a left-sided paralysis with a loss of sensation and unable to reposition herself. Mrs. J had a decreased appetite and was unable to feed herself; her abdomen distended from ascites and she weighed 250 pounds. She was incontinent of urine and had chronic vaginal discharge. The family requested hospice support to allow Mrs. J to return to her home with her husband as her primary caregiver.

Mrs. J's initial psychosocial assessment had determined that quality of life for this patient was defined as remaining comfortable and at home. Mr. J was a willing caregiver, but not knowledgeable about specific caregiving activities. The initial comprehensive assessment as well as Mrs. J's Braden score of 12 put her in the high-risk category for developing a pressure ulcer.

A prevention and skin protection plan was implemented. For pressure redistribution and to facilitate position changes, Mrs. J was placed on an electric hospital bed with an alternating pressure mattress and a lift sheet. Mr. J was counseled about the need for frequent position changes and how to reposition without friction or shearing. Pillows for support and to keep Mrs. J's heels off the bed were used. The head of her bed was elevated only for meals. Her care plan included the use of a perineal cleanser and a skin barrier paste as well as incontinent briefs to wick moisture away. Eventually for skin hygiene and caregiving reasons, an indwelling urinary catheter was inserted. A home health aide was assigned to Mrs. J for several hours a day to assist with personal care including bathing, skin care, feeding, and turning.

Mrs. J was not consuming an adequate quantity of food to meet her nutritional requirements. She suffered from anorexia and consumed less than 25% of meals offered. Chemotherapy had altered her sense of taste and smell. Mrs. J had Advance Directives that stated that she did not wish any artificial feedings including tube feedings or parenteral nutrition to keep her alive. Her husband supported her in that decision. In keeping with their goal of maximizing her nutritional benefit, pleasure, and comfort from food while minimizing discomfort, Mr. J was taught to offer frequent, small tastes of favorite foods. A high-calorie, high-protein, vitamin-enriched liquid nutritional supplement were also added for Mrs. J to drink, as she wished.

Even with the additional support the hospice team provided, caretaking was difficult for Mr. J. As Mrs. J became more debilitated, her husband was less able to provide care. The social worker discussed obtaining additional assistance at home or the possibility of moving Mrs. J to a facility where 24-hour help would be available. Mr. and Mrs. J did not want to make any changes.

Mrs. J developed an intact 3 cm × 3 cm nonblanchable area of persistent redness (stage 1) that quickly progressed a to 7 cm × 5 cm area with soft brown eschar and slough covering the wound bed; therefore, it was classified as unstageable.

The family understood that Mrs. J's poor nutritional status, lack of mobility, incontinence, current living situation, and progressive underlying disease process precluded healing of her sacral wound. Her life expectancy was a matter of weeks, and symptom control was now a primary concern. The family did not want uncomfortable or burdensome treatments. Mrs. J's husband just wanted her to be comfortable and he did not want any odor. He also stated that he could not do the wound care.

Using this information, a wound care plan was developed for Mrs. J to protect the wound from

Figure 6. Hospice policy for palliative wound care. (Courtesy of Myra Nenna, RN, BN, CHPN, WCC, Hunterdon Hospice.)

Our purpose is to incorporate a holistic approach including assessment of the wound, and the total patient as a basis for determining and evaluating the therapeutic plan of care for hospice patients with wounds. Establish patient-centered goals, treatment program, and expected outcomes.

Assessment	At every nurse visit
Goals of hospice wound care	• Prevent deterioration of the wound • Reduce discomfort and pain • Prevent infection • Manage exudate • Manage odor • Provide for optimal functional capacity
Assess the patient and the wound	• Assessment of pain, odor, function, cosmetic appearance • General condition of the patient: nutrition, pain, psychosocial • Location, cause • Size (Length x Width) • Depth/ Stage (for pressure ulcer only) • Necrotic tissue type • Exudate—type and amount • Clinical signs of local or systemic infection (fever, foul odor, etc.) • Evaluate patient tolerance of treatment plan at each encounter • Evaluate the ability and motivation of the patient/family to comprehend and participate in treatment plan
Interventions	• Refer to dressing/formulary chart based on the assessment • Match moisture-retentive dressings to the amount of exudate produced • Debride necrotic tissue as per protocol • Encourage high-calorie/high-protein diet as tolerated • Pain management prior to wound care as needed • Minimize dressing changes • Plan of care should be reassessed at nursing visits • Set realistic treatment goals consistent with patient/family goals • Consult with the physician regarding assessment findings/plan of care • Consult as needed to wound care specialist
Safety/ Precautions	• Use clean technique when treating or dressing a wound • Check for allergies prior to initiating treatments
Patient/Family teaching	• Realistic treatment goals • Educate patient and family to treatment plan • When to call hospice

Figure 7. Hospice wound bed preparation guidelines. (Courtesy of Myra Nenna, RN, BN, CHPN, WCC, Hunterdon Hospice.)

A holistic approach, taking into consideration patient goals, potential for healing, type and amount of necrotic tissue, absence or presence of infection, the patient's tolerance for potential approaches, and economic considerations, will be used to guide the method selected.

DEBRIDEMENT	Removing bacteria and moist necrotic tissue from a wound even when healing is not the primary focus can meet palliative wound goals to control pain, manage infection, odor, bleeding, and exudate.
When not to debride	A wound is stable if it is clean, dry, nontender, nonfluctuant, nonerythematous, and nonsuppurative. Dry eschar acts as a natural barrier to infection. For a patient with a very short life expectancy, the plan of care would focus on preventing trauma to the wound and on assessment to monitor for complications.
Interventions	**Autolytic Debridement of moist necrotic wounds** • Involves using dressings that maintain moisture within the wound bed, supporting the body's own ability to cleanse itself. The action of enzymes present in wound fluids will break down necrotic tissue. **Best Uses:** • Stage III or IV wounds **Advantages:** • Noninvasive • Selective—only necrotic tissue is liquefied, enabling easier removal • Prevents damage to new cells • Dressings changes every 3 to 5 days or as needed • Causes little or no pain **Disadvantages:** • Slow • Not for infected or inflamed wounds. May promote anaerobic growth if an occlusive hydrocolloid is used. **Protect periwound skin** • Other methods are surgical, mechanical, and enzymatic and require evaluation by wound care specialist and physician intervention.
Products	• Hydrocolloids, hydrogels, transparent films, alginates, and foams are interactive dressings that can be used for autolytic debridement. See hospice wound dressing formulary. Consult wound RN as needed.
Patient/Family teaching	• Realistic treatment goals • Educate patient and family to treatment plan • When to call hospice

Figure 8. Questions and Answers. (Courtesy of Myra Nenna, RN, BN, CHPN, WCC, Hunterdon Hospice.)

WOUND WISDOM
Hunterdon Hospice

Question: How can you tell the difference between slough and eschar?

Answer: Slough is usually lighter in color, thinner and stringy in consistency; Color – Can be yellow, gray, white, green, brown

Eschar is usually darker in color, thicker and hard consistency black or brown in color.

Question: How can I tell the difference between a Stage I pressure ulcer and a Deep Tissue Injury?

Answer: Stage I is pink or red. It doesn't blanch, and it doesn't go away if you leave it alone for 15 or 20 minutes.

A DTI is purple, lavender, maroon, or some other shade of purple. It is purple, purple, purple. Or, it is a blood-filled blister (a serum-filled blister is a Stage II). It is important! A DTI will probably break down and be a Stage III or IV.

Question: Should I debride stable heel ulcers?

Answer: Heel ulcers with dry eschar should not be debrided if they do not have edema, erythema, fluctuance, or drainage.

Instead protect the hardened eschar from breaking down (use cavilon spray and protect from shearing and pressure).

Question: When a patient who is incontinent continually experiences skin breakdown in the gluteal folds and buttocks area, is this considered a pressure ulcer?

Answer: If the skin breakdown is related to exposure from urinary and fecal incontinence this is referred to as: incontinence associated dermatitis (IAD).

The clinical characteristics of incontinence dermatitis will appear as redness, blistering, erosion; lesions remain partial-thickness and free from necrosis (slough or eschar). The areas of redness may be patchy or consolidated. Loss of epidermis, caused by exposure to urine, feces, body fluids, wound drainage, or friction should be described as "denuded".

Question: What are the primary risk factors for development of pressure ulcers?

Answer: Co-morbid conditions

Urinary or fecal incontinence

Malnutrition & hydration deficits

Impaired diffuse or localized blood flow

Drugs such as steroids that may affect wound healing

History of a healed pressure ulcer

Patient refusal or inability to tolerate some aspects of care & treatment

Intrinsic risks due to aging

Alterations in sensation or response to comfort

infection and manage pain, odor, and exudate. A foam dressing was chosen that contained a mild, nontoxic wound-cleansing agent that supported autolytic debridement, decreasing bacteria and odor by continuously cleansing the wound. Glycerin, present in the dressing, softened and removed slough and necrotic tissue and prevented the dressing from adhering to the wound bed, decreasing pain. The starch polyurethane membrane drew exudate out of the wound, keeping it away from her surrounding skin, preventing maceration. The foam also gently expanded to fill and conform to the wound, eliminating dead space. The transparent film backing allowed visual inspection to determine the need for a dressing change, prevented external bacterial contamination, and maintained a constant warm, moist wound environment.

Prior to wound care Mrs. J was given medication to reduce pain from positioning. The nurse, with the help of the home health aide, performed the dressing changes. The dressing was able to remain in place for a period of 2 to 3 days before requiring changing. Mrs. J did not report any pain from her wound and Mr. J did not have any complaints of odor. Exudate was contained and the wound did not become infected. Mrs. J died before her wound was completely debrided, but more importantly, with the dressing treatment, we were able to meet their goal of maintaining a stable wound and keeping her comfortable and at home.

Conclusion

End-of-life patients are an especially vulnerable population. Even with preventative measures in place, poor nutrition, immobility, loss of cognitive function, and incontinence may lead to unavoidable pressure ulcers. With severe illness, comfort may be more important than preventative measures. Educating the family to the possibility of skin breakdown and the development of wounds that may not heal allows them to make informed, realistic decisions about care.

A comprehensive assessment using a holistic approach, which incorporates the patient and family, results in an individualized plan of care. Each wound must be assessed within the context of the patient and their goals. When healing is not realistic, goals of care become wound stability, symptom management, and comfort.

There are no definitive wound protocols for treating dying patient's wounds, only guidelines. Clinicians caring for patients with pressure ulcers should understand their Agency's pressure ulcer risk assessment process and tool. Training in the use of NPUAP pressure ulcer staging is recommended for all clinicians.

When caring for palliative care patients who present with many of the risk factors associated with pressure ulcer development, poor healing potential, or short life expectancy, agency policy and procedures need to reflect a balance so a realistic treatment plan that can successfully meet goals of care can be achieved (Figures 6 and 7). Clinicians caring for end-of-life patients need to understand the fundamental principles of wound management while understanding palliative goals of care as they assess, plan, and evaluate treatment. They need to ask themselves: Are we using the best wound practice guidelines available? Do we understand the patient's goals for palliative care? Are the objectives realistic?

Ongoing education programs about best practices through education newsletters (Figure 8) or in-service training can help assure that clinicians can answer these questions affirmatively.

Even at the end of life, combining the elements of palliative care with the principles of effective wound management can significantly enhance the patient's quality of life. ☗

Myra Nenna, RN, BN, CHPN, WCC, *is a Case Manager with Hunterdon Hospice, Flemington, New Jersey.*

The author of this article has no significant ties, financial or otherwise, to any company that might have an interest in the publication of this educational activity.

Address for correspondence: Myra Nenna (Nenna.Myra@hunterdonhealthcare.org).

DOI:10.1097/NHH.0b013e3182173ac1

REFERENCES

Alvarez, O., Meehan, M., Ennis, W., Thomas, D., Ferris, F., Kennedy, K...,, Rodeheaver, G. (2002). Supplement: Chronic Wounds: Palliative Management for the Frail Population–Part 111. *Wounds, 14*(8S), 13s-18s.

Ayello, E., Baranoski, S., Cuddigan, J., & Sibbald, R. (2008). Wound Debridement. In Baranoski, S., & Ayello E., *Wound care essentials: Practice principles (2nd ed.* pp.119-135). Springhouse, PA: Lippincott Williams & Wilkins.

Ayello, E. A., Capitulo, K. L., Fife, C. E., Fowler, E., Krasner, D. L., Mulder, G., ..., Yankowsky. K. W. (2009). Legal issues in the care of pressure ulcer patients:

Key concepts for health care providers: A consensus paper from the international expert wound care advisory panel. *Journal of Palliative Medicine, 12*(11), 995-1008.

Ayello, E. A., & Lyderm, C. H. (2008). A new era of pressure ulcer accountability in acute care. *Advances in Skin and Wound Care, 21*(3), 134-140.

Braden, B. J., & Maklebust, J. (2005). Preventing pressure ulcers with the Braden scale: An update on this easy-to-use tool that assesses a patient's risk. *American Journal of Nursing, 105*(6), 70-72.

Brink, P., Smith, T. F., & Linkewich, B. (2006). Factors associated with pressure ulcers in palliative home care. *Journal of Palliative Medicine, 9*(6), 1369-1375.

Cimino, J. E. (2003). The role of nutrition in hospice and palliative care of the cancer patient. *Topics Clinical Nutrition, 18*(3), 154-161.

Clinical Practice Guidelines from the Agency for Health Care Policy and Research. (1994).

Treatment of pressure ulcers. Clinical Practice Guideline Number 15.

AHCPR Pub. No. 95-0652. Rockville, MD: U. S. Department of Health and Human Services.

Cuddigan, J., Berlowitz, D. R., & Ayello, E. A. (2001). Pressure ulcers in America: prevalence, incidence, and implications for the future: An executive summary of the National Pressure Ulcer Advisory Panel monograph. *Advances in Skin & Wound Care, 14*(4), 208-215.

DaVanzo, J. E., El-Gamil, A. M., Dobson, A., & Sen, N. (2010). A retrospective comparison of clinical outcomes and medicare expenditures in skilled nursing facility residents with chronic wounds. *Ostomy Wound Management, 56*(9), 32-42.

Ennis, W., & Meneses, P. (2005). Palliative care and wound care: 2 emerging fields with similar needs for outcomes data. *Wounds, 17*(4), 99-104.

Fleck, C. (2005). Ethical wound management for the palliative patient. *Extended Care Product News, 100*(4), 38-46.

Fleishman, A. (2005). Adult wound care management of pressure ulcers. *Today's Dietitian, 17*(1), 38.

FRAIL. Healing Probability Assessment Tool. (1999). *For recognition of the adult immobilized life.* Retrieved from http://www.frailcare.org/projects.htm

Galvin, J. (2002). An audit of pressure ulcer incidence in a palliative care setting. *International Journal of Palliative Nursing, 8*(5), 214-221.

Kalinski, C., Schnepf, M., Laboy, D., Hernandez, L., Nusbaum, J., McGrinder, B., ..., Alvarez, O. (2005). Effectiveness of a topical formulation containing metronidazole for wound odor and exudate control. *Wounds, 17*(4), 74-79.

Kemp, C. (2006). Anorexia and cachexia. In Ferrell, B., & Coyle, N, *Textbook of palliative nursing* (2nd ed., pp. 169-176). New York, NY: Oxford University Press.

Lee, S., & Turnbull, G. (2001). Wound care in a PPS environment. Cost-effective care has assumed paramount importance. *Nursing Homes Long Term Care Management, 50*(3), 34-37.

Mathus-Vliegen, E. M. (2004). Old age, malnutrition, and pressure sores: An ill-fated alliance. *Journal of Gerontology: Medical Sciences, 59*(4), 355-360.

McCallon, S. (2007). Enzymes for wound debridement and healing. *Extended Care Product News, 120*(6), 30-35.

McDonald, A., Lesage, P. (2006). Palliative management of pressure ulcers and malignant wounds in patients with advanced illness. *Journal of Palliative Medicine, 9*(2), 285-295.

National Pressure Ulcer Advisory Panel. (2007). *Pressure Ulcer Stages Revised by NPUAP*.

Retrieved from http://www.npuap.org/pr2.htm

National Pressure Ulcer Advisory Panel. (2010). Position Paper: Not all pressure ulcers are avoidable. Retrieved from http://www.npuap.org

Pancorbo-Hidalgo, P., Garcia-Fernandez, F., Lopez-Medina, I., & Alvarez-Nieto, C. (2006). Risk assessment scales for pressure ulcer prevention: A systematic review. *Journal of Advanced Nursing, 54*(1), 94-110.

Patel, B., & Cox-Hayley, D. (2009). Managing wound odor. *Fast Facts and Concepts*, August, 218. Available at http://www.eperc.mcw.edu./fastfact/ff_218.htm

Pieper, B. (2007). Mechanical forces: Pressure, shear and friction. In Bryant, R., & Nix, D. (Eds.), *Acute and Chronic Wounds Current Management Concepts* (3rd ed. pp. 205-234). St Louis, MO: Mosby.

Posthauer, M., & Thomas, D. (2008). Nutrition and wound care. In Baranoski, S. & Ayello, E., *Wound care essentials: Practice principles* (2nd ed., pp.172-202). Springhouse, PA: Lippincott Williams & Wilkins.

Reifsnyder, J., & Magee, H. (2005). Development of pressure ulcers in patients receiving home hospice care. *Wounds, 17*(4), 74-79.

Stokowski, L. (2010). In this corner: The unavoidable pressure ulcer. Retrieved from http://www.medscape.com/viewarticle/715969

Tice, M. (2006). Wound care in the face of life-limiting illness. *Home Healthcare Nurse, 24*(2), 115-118.

Vowden, K., & Vowden, P. (2002). *Wound bed preparation*. Retrieved from http://www.worldwidewounds.com/2002/april/Vowden/Wound-Bed-Preparation.html

World Health Organization. (2002). Retrieved from http://www.who.int/cancer/palliative/definition/en/

Zacur, H., & Kirsner, R. (2002). Debridement: Rationale and therapeutic options. *Wounds, 14*(7 Suppl. E), 2E-7E.