

Long-Term Care Risk Management:

PRESSURE ULCERS

HANDBOOK

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Karen S. Clay, RN, BSN, CWCN, is president of Kare N' Consulting, a long-term care consulting company in Brimfield, MA. She specializes in wound management, risk management, and clinical-program development. An active educator, Clay regularly conducts seminars on wound management and works with facilities as part of the Centers for Medicare & Medicaid Services' Nursing Home Quality Initiative on pressure-ulcer prevention and management.

Clay's 20-plus years of experience in healthcare management includes serving as a director of nurses, corporate clinical consultant, and founding member of a company specializing in long-term care medical services.

She is author of the 2000 HCPro, Inc., publication, *The Long-Term Care Survey Preparation Handbook*. Her work regularly includes presurvey assessments of long-term care facilities. Clay is unique in her ability to traverse from resident bedside to classroom to boardroom with ease, competence, and a sense of humor.

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Pressure-ulcer development

Pressure ulcers are areas of localized tissue damage caused by the compression of soft tissue over a bony prominence and an external surface. Age-related skin changes place the elderly at the highest risk and their tissue more vulnerable to friction, shear, and pressure. Factors of pressure ulcers include the following:

- The junction of the dermis and epidermis flattens and makes it less resistant to shear forces
- The skin appears thin and transparent due to a decrease in thickness of the dermis
- There is also a loss of subcutaneous fat and decreased sensory perception

The following is a list of risk factors and the reasons for their importance:

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Sample risk factors	How do they affect risk or healing?
Contracture of left lower extremity	<ul style="list-style-type: none"> This poses positioning difficulty depending on the degree of the contracture Blood supply may be impaired (depending on contracture severity), which could result in an ischemic limb at higher risk of pressure-ulcer development
Poor intake, low albumin or prealbumin level, weight loss	<ul style="list-style-type: none"> Poor nutrition is associated with pressure-ulcer development and impaired healing
Limited turning surfaces due to presence of pressure ulcers on left and right trochanter	<ul style="list-style-type: none"> Repositioning techniques are limited due to the presence of pressure ulcers on two of four turning surfaces
Head of bed elevation at all times due to acute congestive heart failure	<ul style="list-style-type: none"> Head of bed elevation is known to cause shear-tissue injury
Pain	<ul style="list-style-type: none"> Pain causes vasoconstriction, which impairs circulation Pain will likely result in suboptimal compliance with movement
Diabetes	<ul style="list-style-type: none"> Impaired immune function Loss of lean body mass that is replaced with inactive fat mass Increased blood glucose impairs blood flow through small vessels Impairs red blood cell permeability and flow
Immobility	<ul style="list-style-type: none"> Sustained pressure causes tissue ischemia Spinal cord injured (may be capable of moving when desired, but doesn't get sensation of discomfort when it is time to move)
Anemia	<ul style="list-style-type: none"> Poor perfusion of tissues especially if hematocrit drops below 20%
Depression	<ul style="list-style-type: none"> May effect level of mobility and appetite
Systemic corticosteroids	<ul style="list-style-type: none"> Interfere with regeneration of the epidermis and collagen synthesis
Nonsteroidal anti-inflammatory drugs	<ul style="list-style-type: none"> Alter inflammatory reactions
Hematologic abnormalities	<ul style="list-style-type: none"> Impaired healing with WBC deficiencies Reduction in RBCs delays healing due to less oxygen delivery
Edema	<ul style="list-style-type: none"> Edematous tissue is more prone to breakdown Impairs circulation by pressure on vessels by accumulation of fluid in tissue spaces May be an indicator of protein malnutrition
Hypotension	<ul style="list-style-type: none"> Associated with impaired blood perfusion to tissue

Risk assessment and prevention

Conducting a risk assessment is key to an effective pressure-ulcer-prevention program. Typically, facilities use either Braden or Norton risk-assessment scales. Nancy Bergstrom, PhD, RN, FAAN, and Barbara Braden, PhD, RN, FAAN, found in their research on long-term care that 80% of pressure ulcers developed *within two weeks of admission* and that 96% developed *within three weeks of admission*. Most facilities conduct an assessment upon admission and may not reassess until three months later, according to the Minimum Data Set (MDS) schedule. That assessment schedule is woefully inadequate if you consider how quickly upon admission pressure ulcers could develop.

Best practice

Assess risks for pressure-ulcer development upon admission/readmission, weekly for four weeks, monthly or quarterly thereafter, and upon change in resident status. When addressing pressure ulcers as a risk-management problem, prevention is the number one solution.

Positioning

Frequent positioning of the resident is recommended to prevent capillary occlusion, which leads to tissue ischemia and pressure ulcers. Pressure-ulcer formation is a combination of the intensity of pressure and the duration of pressure. Although repositioning will not reduce the intensity of pressure, it will reduce duration, which is more critical.

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The following is a list of recommendations regarding positioning of residents:

- The Agency for Healthcare Research and Quality, formerly known as the Agency for Health Care Policy and Research, recommends repositioning at least every two hours.
- Use the “rule of 30” when repositioning residents. This rule indicates that the head of the bed be elevated to 30° or less and that the body, when repositioned to either side, be placed in a 30° laterally inclined position. In this position, the resident’s hips and shoulders are tilted 30° from supine, which prevents pressure over the trochanter and sacrum. If the head of the bed is elevated beyond 30°, limit the duration of this position to minimize shear forces and pressure.
- Use positioning pillows, pads, or foam wedges to keep bony prominences from direct contact with one another.
- Contracture prevention and management of contractures are important not only for their own sake, but for preventing pressure ulcers as well. Contractures, which cause shortened and flexed positions of the affected area, develop in predictable patterns, so splinting, range of motion exercises, and proper positioning can help prevent their occurrence.
- For positioning of chair-bound residents, pay attention to their anatomy, postural alignment, distribution of weight, and support of the feet.

- The most effective intervention for heels is total “off-loading” of the heel by elevating the lower extremities on a pillow.
- A cornerstone in reducing pressure is choosing support surfaces, such as pressure-reducing cushions, mattresses (e.g., high-density foam, gel, etc.), and specialty beds or mattress-replacement systems.

Staging

Each stage of a pressure ulcer reflects the type and depth of observed damage. *Staging is intended to show tissue destruction, not healing.* The following describes the four stages of pressure ulcers (key staging criteria are italicized for emphasis):

Stage I: An observable, pressure-related alteration of *intact skin*, whose indicators, as compared with the adjacent or opposite area on the body, may include changes in one or more of the following:

- Skin temperature (e.g., coolness or warmth)
- Tissue consistency (e.g., firm or boggy)
- Sensation (e.g., pain or itching)

The ulcer appears as a defined area of persistent redness in lightly pigmented skin, whereas in darker skin the ulcer may appear with red, blue, or purple hues.

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Stage II: A *partial-thickness skin* loss involving the epidermis, dermis, or both. The ulcer presents clinically as an abrasion, a blister, or a shallow crater.

Stage III: *Full-thickness* skin loss involving damage or necrosis of subcutaneous tissue, which may extend down to but not through underlying fascia. The ulcer presents clinically as a deep crater, with or without undermining of adjacent tissue.

Stage IV: *Full-thickness skin* loss with extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures such as tendon or joint capsule.

Partial thickness and full thickness

More common to long-term care is designation of non-pressure-related wounds as partial thickness or full thickness. This terminology is generally viewed as easier for staff to integrate into their practice in the nursing home setting. These terms assess the amount of damaged skin tissue. Partial-thickness wounds are confined to the epidermal layer and may include the dermis, but they do not penetrate beyond the dermis (equivalent to Stage II damage). Full thickness indicates damage of the epidermis, dermis, and damage into subcutaneous tissue or beyond (equivalent to Stage III or IV damage).

“Backstaging” or “reverse staging” is clinically inappropriate. The MDS currently requires backstaging for coding. Although you

must comply with this requirement, you should not backstage at any other time.

Wound evaluation: Tissue type

There are four types of tissue that may be observed in a pressure ulcer: epithelial, granulation, slough, and eschar/necrosis. Epithelial and granulation tissue are viable (living) and slough and eschar tissues are non-viable (non-living). All four types of tissue can be present in one pressure ulcer:

- *Epithelial tissue*, is fragile, pink tissue that forms in the process of healing. In a Stage II pressure ulcer, this tissue may be observed not only at the edges but also throughout the bed of the wound.
- *Granulation tissue* is typically red and moist and often is described by the term “beefy red.” This tissue contains new blood vessels and connective tissue. Granulation tissue fills the cavity of deeper wounds, and is only observed in Stage III or Stage IV pressure ulcers or full-thickness wounds.
- An accumulation of dead cellular debris, *slough* is dead tissue that is in the process of separating from viable tissue. It is usually yellow or yellowish-white due to the large number of leukocytes present.
- *Eschar* is dead tissue that is thick, black, and leathery. Although eschar can be soft and adherent, it most often is firm and hard.

Treatment goals

The overall goals of treatment are to promote wound healing, prevent complications, prevent deterioration of the existing wound, prevent additional skin breakdown, and minimize the harmful effects of the wound on the resident's overall condition.

Wound management should include the following steps:

- Repositioning schedule in chair and in bed, and back-to-bed routines
- Positioning devices, including contracture management
- Pressure-relief devices for chair/bed
- Interventions to reduce friction and shear including but not limited to moisturizing skin, protecting heels, drawing sheets for lifting, limiting head-of-bed elevation (if possible), etc.
- Management of incontinence, including bowel/bladder program if possible and/or incontinence skin barriers and briefs/underpads
- Medical assessment and treatment of complicating or contributing history or diagnoses
- Nutrition, including consideration of labs, vitamin support, and protein supplementation, as indicated
- Hydration management (if needed)

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- Pain-management needs
- Psychosocial support
- Education of and communication with the resident/responsible party
- Wound-cleansing product
- Topical treatment determined by wound and resident needs
- Dressings that provide a moist wound environment
- Keeping peri-wound skin dry, controlling exudate, and in the case of a cavity wound, eliminating dead space
- Reassessment of the wound weekly, at a minimum, and revising the treatment plan as needed

Dressing categories

When it comes to choosing dressings to treat pressure ulcers, products should meet the following criteria:

- Provide a moist environment
- Keep the peri-wound skin dry
- Control exudate (without dehydrating the wound)
- Eliminate the dead space by loosely filling open spaces
- Maintain consistency with resident-specific goals

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The following chart is a list of different dressings and their descriptions:

Product	Description	Indication/Information
Alginate	Highly absorbent, biodegradable dressing (made from seaweed)	Heavily draining wounds; bleeding surface wounds (not for use on dry wounds)
Foam	Sponge-like polymer dressing with absorptive properties	Draining wounds; under compression dressings
Gauze	Woven or nonwoven; cotton or synthetics, permeable to water, water vapor and O ₂ ; May be impregnated	<i>Woven:</i> for packing and nonselective debridement <i>Non-Woven:</i> Absorb and wick excess fluid; softer; won't adhere to wound bed
Hydrocolloid	Contains gel-forming agents and gelatin; form self-adhesive, waterproof wafer; occlusive or semi-occlusive dressing (may be combined with other products to allow absorption)	Partial-thickness wounds with light drainage; should not be used with clinically infected wounds
Hydrogel	Water-based gel; donates moisture to dry tissue	Clean wound with minimal drainage or to promote autolysis with superficial tissue
Hydrofiber	Made in sheets; vertically wick wound exudate	Absorbs wound fluid; leaves a gel on surface
Transparent Film	Clear, adherent, nonabsorptive dressing; permeable to oxygen and water vapor; not permeable to water	Non-absorbent; may provide protection of newly healed area; may be primary or secondary dressing
Collagen	Powder, sheets or pastes made of collagen (usually bovine)	Absorbs wound fluid and provides a matrix for granulation tissue

Risk management

In the event residents develop pressure ulcers, use the following checklist as a guideline to provide them with the necessary services and support:

New Pressure Ulcer Checklist

Resident Name: _____ Date: _____

When a new pressure ulcer is noted you must set several things into action. Please use this checklist as a guideline to be sure the resident receives all the needed services and support.

Assess

- Conduct initial assessment and fill in on the _____ form
 - Location and stage
 - Measurements (length X width X depth), measure tunnels or undermining with “cm” and location of tunnel and undermining (according to clock)
 - Exudate (color and amount), odor (determine after cleaning wound)
 - Wound base tissue description – epithelial tissue, granulation, slough, eschar – in percentages
 - Peri-wound tissue description
 - Any pain assessed or reported
- Assess chair and bed surface for pressure relief devices on or needed
- If pressure ulcer on heel/foot – discuss d/c of leather footwear/sneakers

Notifications

- Notify physician and obtain orders – as appropriate
 - for localized care
 - pain management
 - consultations – rehab, dietary, other

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- specialty bed if needed
- lab work – Hgb, Hct, Albumin or Prealbumin, BUN, Creatinine
- Vitamin support – Multivitamin with minerals, Vitamin C, (Zinc Sulfate- if ordered suggest only 2-4 weeks)
- Notify resident and family/responsible person of pressure ulcer and onset of treatment plan
- Notify C.N.A. via _____ (C.N.A. care card or C.N.A. care plan/assignment)
- Notify Registered Dietitian to obtain nutritional assessment
- Notify _____, Wound Team member
- Notify Director of Nurses (or designee) _____
- Notify P.T. to assess seating cushion, request screen/convey MD order for consultation
- Notify pharmacy consultant to assess med regimen for evaluation of meds contributing to risk

Documentation

- Transcribe treatment on treatment sheet
- Transcribe new physician orders
- Initiate pressure ulcer monitoring/measurement tracking form
- Initiate PUSH Tool
- Initiate repositioning schedule (unless resident is independent)
- Initiate pressure ulcer care plan
- Comprehensive nurses note (in addition to Rx sheet documentation for new ulcers)
 - Full description of pressure ulcer (per the Assessment section)
 - Notifications made
 - Consults initiated
 - Pressure relief devices provided
 - New orders
 - Assessment of pain (and intervention/effect if pain reported)