Section 18

Pressure Ulcer CAP

Problem

A pressure ulcer is defined as a 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 (from www.npuap.org). A number of contributing or confounding factors are also associated with pressure ulcers; the significance of these factors is yet to be elucidated.

Pressure ulcers occur because of pressure over a localized area of skin. They can be limited to the skin or they may involve deep tissues including the underlying bone. They are graded (or described) according to depth. Often they are found over a bony prominence, especially the sacrum and the greater trochanter (upper part of the femur).

If a pressure ulcer is not present, the goal is to prevent one from occurring. If a pressure ulcer is present, the goal is to heal or close it. Unfortunately, these goals cannot always be accomplished. Nevertheless, every effort should be made to do so.

The higher the pressure ulcer descriptive stage, the more severe and the longer the recovery period is likely to be. Healing may be protracted, labor-intensive, and expensive. The following staging (or grading) system is used widely to describe the severity of skin breakdown.

- Stage 1: An observable pressure-related change of intact skin that may include changes in one or more of the following: skin temperature (warmth or coolness), tissue consistency (firm or boggy feel), or sensation (pain, itching). The ulcer appears as a defined area of persistent redness in lightly pigmented skin, whereas in darker skins, the ulcer may appear with persistent red, blue, or purple hues, or its color may simply differ from the surrounding area.
- Stage 2: Partial skin loss involving epidermis, dermis, or both. The ulcer is superficial and presents clinically as an abrasion, open blister, or shallow crater.
- Stage 3: Full thickness skin loss involving damage or necrosis (death of cells) of subcutaneous tissue that may extend down to, but not through, underlying fascia. Bone, tendon, or muscle are not exposed. The ulcer presents clinically as a deep crater with or without undermining of adjacent tissue.
- Stage 4: Full thickness skin loss with extensive tissue necrosis or damage to muscle, bone, or supporting structures (for example, tendon, joint capsule). Undermining and sinus tracts also may be associated with stage 4 ulcers.
- Stage undetermined (for new suite of interRAI tools only): Unstageable often as ulcer is covered with necrotic tissue.

Some of the negative outcomes of pressure ulcers are pain and suffering, increased risk for infections or infecting others, and mortality. A person with a pressure ulcer has three times the mortality risk of a person without an ulcer.

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Overall Goals of Care

- Prevent pressure ulcers from occurring.
- Optimize the local wound or skin environment, allowing the ulcer to close.
- Achieve a clean ulcer base with granulation tissue.
- Maintain a moist local skin environment to allow granulation to take place.
- Check the progress of pressure ulcer healing.
- Prevent the development of more severe or new pressure ulcers.
- Check skin regularly for signs of emerging pressure ulcers.

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Pressure Ulcer CAP Trigger

This CAP trigger identifies three subgroups of persons for specialized follow-up. The specialized follow-up seeks to heal either an existing pressure ulcer or to prevent pressure ulcers from occurring. Specialized follow-up may include consultation with a practitioner (physician, wound care specialist, or nurse) with expertise in ulcer/wound care.

TRIGGERED — HAS A STAGE 2 OR HIGHER LEVEL PRESSURE ULCER
AND THE GOAL OF CARE IS HEALING

The proportion of persons with such a pressure ulcer in any service program in part depends on the vigilance of the caregivers (staff) in preventing pressure ulcers.

In long-term care facilities the range can be wide, with some facilities having few persons with a stage 2 or higher pressure ulcer, and others having many persons with this condition. On average, about 10% of persons in long-term care facilities fall into this category, including those who entered the facility with an ulcer.

In a home care program, 2 to 8% of persons will have a stage 2 or higher stage pressure ulcer. Among older adults living independently in the community, this condition is uncommon.

Care outcomes. Over a 90-day period, about 60% of persons in long-term care facilities with a stage 2 or higher pressure ulcer will improve, while about 45% of home care recipients will improve.

TRIGGERED — DOES NOT HAVE A STAGE 2 OR HIGHER PRESSURE ULCER
BUT IS AT RISK OF DEVELOPING SUCH AN ULCER

Two subgroups of persons fall into this category.

TRIGGERED — HAS A STAGE 1 PRESSURE ULCER

Over a 90-day period, the proportion of persons who will progress to a stage 2, or higher, pressure ulcer varies by the type of program the person is in. About 4% of persons in long-term care facilities and about the same percentage of home care recipients fall into this group. Less commonly, older adults living independently in the community fall into this group.

Care outcomes. In long-term care facilities, about 15% of those triggered into this group will progress to having a stage 2 or higher pressure ulcer over the next 90 days; in a home care program, about 7% will so decline. At the same time, many more of those with a stage 1 pressure ulcer will have no pressure ulcer 90 days later — about 67% of persons in long-term care facilities and 45% of home care recipients.

TRIGGERED — DOES NOT HAVE A PRESSURE ULCER BUT HAS THE FOLLOWING RISK FACTORS

Dependent, or activity did not occur in either bed mobility or transfer, **and** has one or more of the following risk factors present: has a history of pressure ulcers, has an indwelling catheter, has a stasis ulcer, or is receiving wound care. About 4% of persons in long-term care facilities, 3% of home care recipients, and less than 1% of older adults living independently in the community fall into this risk group.

Care outcomes. About 15% of persons in long-term care facilities and 10% of home care recipients with the above risk factors will develop a pressure ulcer over the following 90-day period.

NOT TRIGGERED — Has no pressure ulcer or pressure ulcer risk factors. This subgroup includes 82% of persons in long-term care facilities, 90% of home care recipients, and 99% of older adults living independently in the community.

Pressure Ulcer CAP Guidelines

Ulcer Management

For all ulcers present at admission into a program, document the following: location, size, stage, presence and type of drainage, presence of odors, and description of the surrounding skin. If possible, take a picture of the ulcer.

Is an eschar (blackened devitalized tissue) present? Is yellow tissue (slough) present?

- A physician or wound care specialist consultation is needed to determine how (and by whom and where) to remove this tissue or if it should be removed. Debridement choices to remove the damaged and dead tissue include surgical and chemical means.

Does the wound bed seem infected?

- If there is reason to believe the ulcer is infected (such as the presence of a foul odor, increasing pain, surrounding skin is reddened [erythema] or warm, or there is a presence of pus) treatment options to be considered by the physician or wound care specialist include
  - Topical or systemic antibiotics
  - Debridement
  - In chronic wounds, silver impregnated dressings may be a better choice given the increased incidence of antibiotic resistant organisms.

Is granulation tissue present (a beefy red tissue resulting from new capillary formation and fibroblasts)? This is essential for healing to occur.

- View the wound at the time any wound care product is applied and note whether granulation tissue is present and the wound is healing as expected.
  - If the condition of the wound bed begins to decline, a physician or wound care expert consultation is needed.
- Once granulation tissue is present, the goal is to maintain a clean, moist environment. Some products that may be helpful include
  - Polymer films and foams
  - Hydrogels
  - Hydrocolloids
  - Alginates or absorptive beads
  - Combination products
  - Silver impregnated products
- Document the depth of the ulcer and measure it at least weekly. Record the presence of granulation tissue, slough, eschar, or signs of an infection. Employ a progress monitoring tool.

If the ulcer does not show signs of healing, despite therapy, consider complicating factors.

- Is there an elevated bacterial level in the absence of clinical infection? Is exudate present, necrotic debris or slough in the wound, too much granulation tissue, or odor in the wound bed? Expert consultation should be considered if these conditions are present.
- Is there an underlying osteomyelitis (bone infection)? Additional diagnostic studies may be needed.
- Are there co-morbid conditions or illnesses? Many acute and chronic conditions, such as diabetes mellitus, a malignancy, or the use of steroids, may make healing difficult.
- Is the person terminally ill? Consider changing treatment goals to comfort measures.
- Has a turning schedule been implemented? This should remove pressure from the wound but should also minimize pressure on areas at risk.
- Does the person need a pressure relieving or reducing mattress? Consultation may be needed for the appropriate surface.
- Have nutritional deficits been addressed? Although data on the efficacy are limited, consider vitamins and minerals (for example, zinc and vitamin C) supplementation. [See Undernutrition CAP.]
- Is protein intake sufficient for healing? Generally about 1.25 grams of protein per kg of body weight is recommended if there are no contraindications to this diet. Has a dietitian been consulted? [See Undernutrition CAP.]
- Is pain present when dressings are changed? Evaluate for underlying infection and bone or tissue involvement. [See Pain CAP.]

- Is the person depressed or frustrated by the ulcer? Consider counseling, if appropriate, to the person and/or family/caregivers regarding the treatment plan and its potentially protracted course. [See Mood CAP.]

For those at risk of developing pressure ulcers, treat as follows:

Evaluate for extrinsic risk factors.

- Pressure
  - Can the person move sufficiently to relieve pressure over any one site? If not, must a caregiver move the person?
  - Is the person confined to a bed or chair all or most of the time?
  - Is the mattress or seat cushion appropriate to reduce or relieve pressure? Can a special pressure relieving mattress or chair cushion be provided?
  - If the person cannot move independently, is a regular (for example, every 2 hours) turning schedule provided?
  - Ensure that the person and family understand the need to monitor pressure points.
- Friction and shearing forces
  - Is the person sliding down in the bed?
  - Is the person who needs help with bed mobility or transfer moved by sliding rather than lifting?
- Maceration (destruction of skin because of excess moisture)
  - Is the person persistently wet, especially from fecal incontinence, wound drainage, or perspiration?

Evaluate for intrinsic risk factors.

- Altered mental status
  - Is delirium limiting mobility? [See Delirium CAP.]
  - Is cognitive loss limiting mobility? [See Cognitive Loss CAP.]
  - Address the underlying cause(s) of mental status changes to the extent possible.
- Immobility (person is unable to change position)
  - Is it because of a condition such as a stroke, multiple sclerosis, or hip fracture?
  - Has physical or occupational therapy been maximized?
  - Is immobility due to other causes?
    - Physical restraints should always be removed unless the person is at serious risk of self-injury or injury to others and no other means of control is possible. [See Physical Restraints CAP.]
    - Consider reducing the dose of or stopping medications that limit mobility (for example, psychotropics, opioids). Review all medications with the physician (or the nurse-practitioner or

physician assistant) and consulting pharmacist. [See Medication CAP.]

- Incontinence: Fecal incontinence may be associated with pressure ulcer formation. [See Bowel CAP.]
  - Has a scheduled toileting program been tried?
- Poor nutrition [See Undernutrition CAP.]
- Have additional disease states, for example, peripheral vascular disease, diabetes mellitus, and any cause of decreased sensation been discussed with the physician or appropriate health care provider?
- Inactivity
  - What is limiting the person's degree of physical activity?

Additional Resources

Baranoski S, Ayello EA. 2003. *Wound care essentials: Practice principals*. Springhouse, PA: Springhouse. **Note:** A practical guide to wound care, especially pressure ulcers.

Bergstrom N, Bennett MA, Carlson CE, et al. 1994. Treatment of pressure ulcers. *Clinical practice guideline*, no. 15. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service, Agency for Health Care Policy and Research. AHCPR Publication No. 95-0652. **Note:** Extensive literature review and grading of the evidence regarding treatment.

Brandeis GH, Powell JW. 1997. Pressure ulcers. In Morris JN, Lipsitz LA, Murphy KM, Belleville-Taylor P, eds. *Quality care in the nursing home.* St. Louis, MO: Mosby, 303–14. **Note:** This chapter provides an overview of pressure ulcers with emphasis for the nursing home person.

European Pressure Ulcer Advisory Panel (EPUAP): www.epuap.org

Folkedahl BA, Frantz RA, Goode C. 2002. *Treatment of pressure ulcers: Research-based protocol.* The University of Iowa, Gerontological Nursing Interventions Research, Research Dissemination Care. **Note:** This protocol provides helpful information for assessing and monitoring pressure ulcers and risk factors for development. www.nursing.uiowa.edu

Hess CT. 2004. *Clinical guide: Wound care*. Philadelphia, PA: Lippincott, Williams and Wilkins. **Note:** A practical guide to wound care, especially pressure ulcers.

National Pressure Ulcer Advisory Panel. Pressure Ulcer Scale for Healing (PUSH) Tool version 3.0. 9/15/98. **Note:** The PUSH tool is copyright by NUPAP. www.npuap.org

National Pressure Ulcer Advisory Panel. Supplementary Surface Standards, Terms and Definitions 8/29/2006. Internet address: www.npuap.org

Reddy, R, Sudeeo, SG, Rochon, PA. 2006. Preventing pressure ulcers: A systematic review. *JAMA* 296:974–84.

Registered Nurses Association of Ontario (RNAO). 2002. Assessment and management of stage I to IV pressure ulcers. (August) 104 pp. [70 references].

Thomas DR. 1997. Pressure ulcers. In Cassel CK, Cohen HJ, Larson EB, et al., eds. *Geriatric medicine*, 3d ed. New York: Springer. 767–84. **Note:** General review of the subject of pressure ulcers.

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