Pressure Injury Definition and Stages

Changes to the Staging System in 2016

Program Objective

- Identify the changes to the 2016 NPUAP staging system

Anatomy of the Skin

- Largest organ of the body
- When intact, serves as the primary prevention from invasion

Pressure Injury Definition

A pressure injury is localized damage to the skin and underlying soft tissue usually over a bony prominence or related to a medical or other device.

The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear.

The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue.
Why the word “injury”?

- Stage 1 and Deep Tissue Injury were never ulcers
- An ulcer cannot be present without an injury, but an injury can be present without an ulcer

Is there greater legal exposure?

- Legal cases on pressure injury/ulcer begin because:
  - The patient or family has an expected outcome which leads to frustration or anger
  - The standard of care was not met
  - The pressure injury was avoidable
  - Cases are not brought forth because of their name

Does the word “injury” makes these cases more litigable?

- We asked multiple malpractice attorneys
- We had no early concerns for the change by stakeholders
- We have had no concerns expressed by those who have endorsed the new terms
- No one knows
  - The change from decubitus to pressure ulcer did not change the case law

Stage 1 Pressure Injury: Non-blanchable erythema of intact skin

Intact skin with a localized area of non-blanchable erythema, which may appear differently in darkly pigmented skin. Presence of blanchable erythema or changes in sensation, temperature, or firmness may precede visual changes. Color changes do not include purple or maroon discoloration; these may indicate deep tissue pressure injury.

Blanch Response

Pale or whitish areas on the skin as blood flow to the region is prevented by a finger or plastic disc (diascopy).

- To determine blanching
  - Apply light pressure for a few seconds
  - Release and watch for quick return to usual skin color
- Blanchable
  - Skin color returns immediately
- Non-blanchable erythema
  - The lack of a blanche response occurs when light pressure is applied or, persistent redness in lightly pigmented skin
Stage 1 Pressure Injury Example

- Stage 1 Pressure Injury was discovered on tissue that had been exposed to pressure in combination with shear.
- Patient was laying supine when the injury pressure occurred.
- Pressure injury is located on the buttocks rather than the sacrum.
  - The linear mark is from a fold in the linen.

Pigmented Skin

- Melanocytes in the epidermis:
  - Produce melanin pigment to absorb radiant energy and protect the skin from harmful ultraviolet (UV) radiation.
- Causes of skin tone variations:
  - Sun exposure
  - Gender
  - Race
  - Hormones
  - Age

Stage 1 in Darkly Pigmented Skin

Intact skin with a localized area of non-blanchable erythema, which may appear differently in darkly pigmented skin.

- Pigmentation of the skin may prevent visualizing the reactive hyperemia in the pressure injury.
- Moistening the skin will often aid in visualizing color change.
- Ask about pain in the area.
- Palpate the skin for induration.

Stage 1 Pressure Injury Example

- Darkly pigmented skin does not have a visible blanche response.
- Examine the skin for other changes indicating pressure injury.
  - Discoloration compared to surrounding skin.
  - Pain in the area.
  - Induration.

Stage 2 Pressure Injury: Partial-thickness skin loss with exposed dermis

Partial-thickness skin loss with exposed dermis. The wound bed is viable, pink or red, moist, and may also present as an intact or ruptured serum-filled blister. Adipose (fat) is not visible and deeper tissues are not visible. Granulation tissue, slough and eschar are not present. These injuries commonly result from adverse microclimate and shear in the skin over the pelvis and shear in the heel.

Stage 2 Pressure Injury Definition - continued

This stage should not be used to describe moisture associated skin damage (MASD) including incontinence associated dermatitis (IAD), intertriginous dermatitis (ITD), medical adhesive related skin injury (MARSI), or traumatic wounds (skin tears, burns, abrasions).
Characteristics of Viable Dermis

- Appearance
  - Shiny, red
  - Visible blood vessels in reticular layer
  - Edge may be distinct in thick tissue or beveled in thin tissue
- Painful
- May have serous drainage

Appearance of Stage 2

- Exposure of reticular layer of dermis
  - Capillary buds visible
  - Can look like slough
  - Is not removable

Paraplegic with thickened skin due to slide transfers creates a visible edge to the ischial stage 2 injury

Stage 2 Pressure Injury Examples

- Lateral Heel
- Thigh and Scrotum from Medical Device
- Anterior Chest from Prone Position while in Operating Room

Stage 2 Pressure Injury Healing

Epithelialization

- Presence of epithelial cells in dermis promotes healing without a scar and contracture
- Pigmentation seldom returns

Stage 3 Pressure Injury: Full-thickness skin loss

Full-thickness loss of skin, in which adipose (fat) is visible in the ulcer and granulation tissue and epibole (rolled wound edges) are often present. Slough and/or eschar may be visible. The depth of tissue damage varies by anatomical location; areas of significant adiposity can develop deep wounds. Undermining and tunneling may occur. Fascia, muscle, tendon, ligament, cartilage or bone is not exposed. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury.

Stage 3 Pressure Injury with Epibole

- Epibole (ee-PIB-oh-lee)
- Rolled edge
  - Due to lack of tissue in the wound bed to support the epidermal cells to cross the wound bed
  - Needs to be removed
Stage 3 Pressure Injury Wound Bed

Full thickness pressure injury heals by:
- Granulation tissue
  - Capillary buds
- Contracture
  - May create epibole
- Epithelialization over the scar
  - Fragile for at least a year

Ulcer Surface Appearance

- Slough (sluf): Dried inflammatory fluids that are moist, stringy; and yellow, tan, gray, green or brown
- Eschar (ES'-car): Necrotic tissue that is leathery or thick; and black, brown or tan

Stage 3 Pressure Injury Examples

- Ischium
- Sacrum
- Heel

Stage 4 Pressure Injury: Full-thickness loss of skin and tissue

Full-thickness skin and tissue loss with exposed or directly palpable fascia, muscle, tendon, ligament, cartilage or bone in the ulcer. Slough and/or eschar may be visible. Epibole (rolled edges), undermining and/or tunneling often occur. Depth varies by anatomical location. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury.

Unstageable Pressure Injury: Obscured full-thickness skin and tissue loss

Full-thickness skin and tissue loss in which the extent of tissue damage within the ulcer cannot be confirmed because it is obscured by slough or eschar. If slough or eschar is removed, a Stage 3 or Stage 4 pressure injury will be revealed. Stable eschar (i.e. dry, adherent, intact without erythema or fluctuance) on an ischemic limb or the heel(s) should not be softened or removed.
Unstageable Pressure Injury Examples

- Unstageable Injury on the Sacrum
- Unstageable Injury on the Lateral Heel

Deep Tissue Pressure Injury: Persistent non-blanchable deep red, maroon or purple discoloration

Intact or non-intact skin with localized area of persistent non-blanchable deep red, maroon, purple discoloration or epidermal separation revealing a dark wound bed or blood filled blister. Pain and temperature change often precede skin color changes. Discoloration may appear differently in darkly pigmented skin. This injury results from intense and/or prolonged pressure and shear forces at the bone-muscle interface.

Deep Tissue Pressure Injury - continued

The wound may evolve rapidly to reveal the actual extent of tissue injury, or may resolve without tissue loss. If necrotic tissue, subcutaneous tissue, granulation tissue, fascia, muscle or other underlying structures are visible, this indicates a full thickness pressure injury (Unstageable, Stage 3 or Stage 4). Do not use DTPI to describe vascular, traumatic, neuropathic, or dermatologic conditions.

Evolution of Deep Tissue Pressure Injury

- Day 1 - Classify intact, discolored skin this pressure as a Deep Tissue Pressure Injury
- Day 3 - Classify discolored skin with epidermal blistering as a Deep Tissue Pressure Injury
- Day 10 - If the Deep Tissue Pressure Injury becomes necrotic, classify it as an Unstageable Pressure Injury

Evolution of DTPI in darkly pigmented skin

Due to the thickness of the skin, the epidermal separation will remain intact for a longer period of time. This phase can be mistaken for skin tears.

DTPI Definition - continued

Do not use Deep Tissue Pressure Injury to describe vascular, traumatic, neuropathic, or dermatologic conditions.
Medical Device Related Pressure Injury

Medical device related pressure injuries result from the use of devices designed and applied for diagnostic or therapeutic purposes. The resultant pressure injury generally conforms to the pattern or shape of the device. The injury should be staged using the staging system.

Mucosal Membrane Pressure Injury

Mucosal membrane pressure injury is found on mucous membranes with a history of a medical device in use at the location of the injury. Due to the anatomy of the tissue these ulcers cannot be staged.

- Upper layer is epithelium
- Columnar cells produce mucus
- Laminar layer provides support

Mucous Membrane Ulcers Examples

- Tongue Injury from Endotracheal tube
- Lip Injury from Endotracheal Tube
If More Than One Type of Tissue is Exposed

- Stage a pressure injury according to the deepest layer of tissue exposed, i.e. adipose, muscle, bone
- If the extent of tissue damage cannot be confirmed because it is obscured by slough or eschar, then it is staged as an Unstageable Pressure Injury

Pressure Injury Staging

Before staging a pressure injury

- Determine that the cause of the injury
  - Is the injury from pressure or pressure in combination with shear?
  - Is the injury from moisture associated skin damage (incontinence associated dermatitis, intertriginous dermatitis), medical adhesive related skin injury or traumatic wounds (skin tears, burns, abrasions).
- Cleanse the wound to remove any loose tissue or other debris

Pressure Injury Staging: Additional Documentation

- History of injury (if known)
  - Date of discovery, including Stage
- Location
  - Use anatomical terms
  - Note medical or other device in use
- Measurements
  - Length, width, depth, tunnels, undermining
- Wound characteristics
  - Wound bed appearance, amount of drainage, odor, periwound skin condition, etc.

What stage pressure injury is shown in the photo to the right?

- Stage 2
- Stage 3
- Stage 4
- Unstageable

This material is soft and odorous.

What stage pressure injury is shown in the photo to the right?

- Stage 2
- Stage 3
- Stage 4
- Unstageable
What stage pressure injury is shown in the photo to the right?

- Deep tissue pressure injury
- Stage 3
- Stage 4
- Unstageable