Wound Classification

Presented by
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Montana State University
Welcome!

Thank you for joining this webinar about how to assess and measure a wound.
A Little About Myself…

• Associate professor at Montana State University
• Executive editor of the *Journal of the World Council of Enterostomal Therapists* (JWCET) and WCET International Ostomy Guidelines (2014)
• Editorial board member of *Ostomy Wound Management* and *Advances in Skin and Wound Care*
• Legal consultant
• Former NPUAP board member
Today We Will Talk About

• How to assess a wound
• How to measure a wound

Please make a note of your questions. Your Quality Improvement (QI) Specialists will follow up with you after this webinar to address them.
Assessing and Measuring Wounds

• You completed a skin assessment and found a wound.

• Now you need to determine what type of wound you found.

• If it is a pressure ulcer, you need to determine the stage.
Assessing and Measuring Wounds

This is important because—

• Each type of wound has a different etiology.
• Treatment may be very different.

However—

• Not all wounds are clear cut.
• The cause may be multifactorial.
Types of Wounds

- Vascular (arterial, venous, and mixed)
- Neuropathic (diabetic)
- Moisture-associated dermatitis
- Skin tear
- Pressure ulcer
Many wounds have mixed etiologies.

• There may be both venous and arterial insufficiency.
• There may be diabetes and pressure characteristics.
Moisture-Associated Skin Damage

• Also called perineal dermatitis, diaper rash, incontinence-associated dermatitis (often confused with pressure ulcers)
• An inflammation of the skin in the perineal area, on and between the buttocks, into the skin folds, and down the inner thighs
• Scaling of the skin with papule and vesicle formation:
  – These may open, with “weeping” of the skin, which exacerbates skin damage.
  – Skin damage is shallow or superficial and edges are irregular or diffuse.
  – Maceration or a whitening of skin may also be observed.
• Results when epidermis is damaged and bacteria are then able to penetrate beneath the surface
Moisture-Associated Skin Damage

Determine what it is.

Is it pressure or moisture?

• May be difficult to distinguish between moisture-associated skin damage and pressure ulcer.

• Unlike moisture-associated skin damage, a pressure ulcer usually has distinct edges.
Pressure Ulcers From Other Sources of Pressure

• Boots, boot straps, oxygen/endotracheal tubes, stockings, and other devices can also lead to pressure-induced ischemia on the skin.

• These are counted separately for incidence and prevalence.
2009 Pressure Ulcer Definition

“... 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.”

NPUAP/EPUAP Pressure Ulcer Prevention and Treatment Guidelines.
Pressure

• Perpendicular force—

  – Compresses tissue
  – Restricts blood flow
  – Causes ischemia and necrosis
  – Ruptures cells and vessels
  – Causes tissue deformation
Shear

- Force parallel to the skin—
  - Stretches and distorts internal tissue
  - May cause occlusion of vessels perpendicular to skin surface

- Leads to ischemia and necrosis
Pressure Ulcer Staging Concepts

- NPUAP classification system:
  - 6 stages or categories:
    - Stage I
    - Stage II
    - Stage III
    - Stage IV
    - Unstageable
    - Suspected deep tissue injury (sDTI)

- Base staging on the type of tissue visualized or palpated.

- Do not reverse stage when documenting a healing pressure ulcer.
Staging is based on the type of tissue visualized or palpated.

**Quick Guide for Pressure Ulcer Staging**

**Partial thickness ulcer**

**Stage I**
Intact skin with non-blanchable redness of a localized area usually over a bony prominence.

**Stage II**
Loss of dermis presenting as a shallow open ulcer with a red-pink wound bed or open/ruptured serum-filled blister.

**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.

**Unstageable**
Base of wound is covered by dead tissue.

**Full thickness ulcer**

**Stage III**
Subcutaneous fat may be visible but bone, tendon, or muscle are not exposed.

**Stage IV**
Exposed bone, tendon or muscle.

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Stage I

**Definition**

- 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.

**Description**

- Area may be more painful, firm, or soft, or warmer or cooler than adjacent tissue.
- Stage I may be difficult to detect in persons with dark skin tones.

*Source: National Pressure Ulcer Advisory Panel*
Stage II

Definition
- **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 or serosanguineous filled **blisters**.

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, incontinence-associated dermatitis, maceration, or excoriation.

Source: National Pressure Ulcer Advisory Panel
Stage III

Definition

• **Full thickness** tissue loss. Subcutaneous fat may be visible but **bone, tendon, or muscle are not exposed**. Some slough may be present.

• May include **undermining** and **tunneling**.

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 “adipose” 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**.

**Source:** National Pressure Ulcer Advisory Panel
Stage IV

Definition

• Full thickness tissue loss with exposed bone, tendon, or muscle.
  – Slough or eschar may be present.
• Often include undermining and tunneling.

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 “adipose” subcutaneous tissue and stage IV ulcers can be shallow.
• Stage IV ulcers can extend into muscle and/or supporting structures (e.g., fascia, tendon, or joint capsule), making osteomyelitis or osteitis likely to occur.
• Exposed bone/tendon is visible or directly palpable.

Source: National Pressure Ulcer Advisory Panel
Unstageable

Definition
• **Full thickness tissue loss** in which actual depth of the ulcer is completely obscured by slough (yellow, tan, gray, green, or brown) and/or eschar (tan, brown, or black) in the wound bed.

Description
• Until enough slough and/or eschar is removed to expose the base of the wound, the true depth cannot be determined but it will be either a Stage III or IV.
• 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.

Source: National Pressure Ulcer Advisory Panel
Suspected Deep Tissue Injury

Definition
• 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.

Description
• The area may be preceded by tissue that is painful, firm, mushy, or boggy, or warmer or cooler than adjacent tissue.
• Deep tissue injury may be difficult to detect in individuals with dark skin tone.
• Evolution may include a thin blister over 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 treatment.

Source: National Pressure Ulcer Advisory Panel
Suspected Deep Tissue Injury

• Difficult to say with certainty as outer skin may be intact.
  – Sometimes it really is a bruise.
  – Damage is to deeper tissue and when you see purplish area it is too late to prevent.

• Better to document exactly what you see than have a facility-acquired wound.
Causes of sDTI

• Falls

• Long OR/ER or transportation times

• Splints

• Accidents
Medical Device-Related Pressure Ulcers

• 9.1% of all identified pressure ulcers
• 11.9% of facility-acquired pressure ulcers

Most frequent locations

<table>
<thead>
<tr>
<th>Anatomic Location</th>
<th>Percentage of Device-Related Pressure Ulcers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ears</td>
<td>20%</td>
</tr>
<tr>
<td>Sacral/coccyx region</td>
<td>17%</td>
</tr>
<tr>
<td>Heel</td>
<td>12%</td>
</tr>
<tr>
<td>Buttocks</td>
<td>10%</td>
</tr>
</tbody>
</table>
Remember the Bariatric Patient

• Check between the skin folds and thighs:
  – Rash
  – Maceration
  – Infection (bacteria or candidiasis)
  – Breakdown

• Pressure ulcers may be in unusual locations.
Assess the Wound

T Tissue both in and around the wound—granulation, slough, necrotic black, pink, mix.

I Infection. Any open area always has the potential for infection.

M Moisture (exudate). This determines type of dressing needed to maintain balance.

E Edges. Are they contracted, rolling, undermining?
Pressure Ulcer Present

Document

• Length, width, and depth
• Location
• Stage
• Exudate (amount, color, and consistency)
• Tunneling and/or undermining
• % of each type of tissue in wound (granulation, epithelial, eschar, slough, fibrinous)
• Wound edges (attached, not attached, rolled under, irregular, callous)
Know Your Assessment Terms

- **Eschar.** Cornified or dried out dead tissue.
- **Slough.** Liquefied or wet dead tissue.
- **Undermining.** Bigger area of tissue destruction than can be seen (extends under the edge).
- **Tunneling.** Tracts extending out from the wound.
How To Measure a Wound

Undermining

Tunneling
How To Measure a Wound

Measure widest width of the pressure ulcer side to side perpendicular (90° angle) to length.
Depth

- Moisten a cotton-tipped applicator with normal saline solution or sterile water.
- Place applicator tip in deepest aspect of the wound and measure distance to the skin level.
Epithelial tissue - new skin growing in superficial ulcer. It can be light pink and shiny, even in persons with darkly pigmented skin.

M0700. Most Severe Tissue Type for Any Pressure Ulcer

- Epithelial tissue - new skin growing in superficial ulcer. It can be light pink and shiny, even in persons with darkly pigmented skin.
- Granulation tissue - pink or red tissue with shiny, moist, granular appearance.
- Slough - yellow or white tissue that adheres to the ulcer bed in strings or thick clumps, or is mucinous.
- Necrotic tissue (Eschar) - black, brown, or tan tissue that adheres firmly to the wound bed or ulcer edges, may be softer or harder than surrounding skin.

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3. **Slough** - yellow or white tissue that adheres to the ulcer bed in strings or thick clumps, or is mucinous

<table>
<thead>
<tr>
<th>Select the best description of the most severe type of tissue present in any pressure ulcer bed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Epithelial tissue</strong> - new skin growing in superficial ulcer. It can be light pink and shiny, even in persons with darkly pigmented skin</td>
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<tr>
<td>2. <strong>Granulation tissue</strong> - pink or red tissue with shiny, moist, granular appearance</td>
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<td>3. <strong>Slough</strong> - yellow or white tissue that adheres to the ulcer bed in strings or thick clumps, or is mucinous</td>
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<td>4. <strong>Necrotic tissue (Eschar)</strong> - black, brown, or tan tissue that adheres firmly to the wound bed or ulcer edges, may be softer or harder than surrounding skin</td>
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Necrotic Tissue (Eschar)

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Skin Failure at Life’s End

• Kennedy terminal ulcer:
  – Pressure ulcers may develop right before death.
  – Some people now say this is skin failure at life’s end
Selecting Dressings and Treatment

Based on—

• Overall medical condition of patient
• Location of wound
• Size of wound
• Wound etiology
• Wound bed tissue involvement
• Exudate amount
• Pain management
• Living arrangements
SKIN ASSESSMENT + RISK ASSESSMENT = EFFECTIVE / COMPREHENSIVE CARE PLANNING
Today We Talked About

• How to assess a wound
• How to measure a wound
Thank you for being such great listeners.

Please refer any questions you have to your QI Specialists.
Resources

• Berlowitz D, VanDeusen C, Parker V, et al. Preventing pressure ulcers in hospitals: a toolkit for improving quality of care. (Prepared by Boston University School of Public Health under Contract No. HHSA 290200600012 TO #5 and Grant No. RRP 09-112.) Rockville, MD: Agency for Healthcare Research and Quality; April 2011. AHRQ Publication No. 11-0053-EF.