Pressure Injuries

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Certification Review Course
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Objectives

The participant will:

• Identify pressure injuries according to the NPUAP pressure injury classification system
• Recognize the documentation essentials for pressure injuries
• Describe the necessary prevention strategies
POP Quiz
Stage Me

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Stage Me
The patient has an ulcer over the sacrum as a result of pressure damage. It measures 2 cm x 3 cm with depth that extends into the subcutaneous tissue with some undermining; slough is present. You cannot see or palpate bone. What stage is it?

1. Stage 4
2. Stage 2
3. Unstageable
4. Stage 3

Ayello et al., 2016, Chapter 13, Wound Care Essentials: Practice Principles
PRESSURE INJURIES
Revised NPUAP 2016 Definition

• A pressure injury is localized damage to the skin and/or 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.
NPUAP Classification 2016

- Stage 1
- Stage 2
- Stage 3
- Stage 4
- Unstageable
- Deep Tissue Pressure Injury (DTPI)
- Mucosal Membrane Pressure Injury

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Medical Device Related Pressure Injuries

— Not a stage
— Just a classification

“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.”
Staging Rules

- Describes the depth of tissue destruction visible
- Documenting
  - Reverse staging should not be used to describe the healing of pressure injuries
  - Do not stage when the base is covered with eschar/necrosis
  - Do not stage a granulating wound if on initial assessment you have not seen the initial depth of the actual tissue injury

NPUAP Staging System, 2009
Usual Pressure Sites

SUPINE POSITION
- Occipital
- Sacrum
- Heel
- Scapula

LATERAL POSITION
- Elbow
- Knee
- Trochanter
- Ankles

SITTING POSITION
- Ischium
How fast does a pressure injury develop?

Unrelieved pressure → Ischemic damage → Cellular death → Pressure ulcer within 2-6 hours

Lyder & Ayello, 2008; Pieper, 2007
Stage 1

- 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.
Stage 1
Stage 2

• Partial-thickness loss of skin 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.
• These injuries commonly result from adverse microclimate and shear in the skin over the pelvis and shear in the heel.
• 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).
Stage 3

• 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 and/or bone are not exposed. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury.
Stage 3
Stage 4

• 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.
Stage 4
Unstageable

- 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 the heel or ischemic limb should not be softened or removed.
Unstageable

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Deep Tissue Pressure Injury (DTPI)

- 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.

- 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.
Deep Tissue Pressure Injury (DTPI)
Mucosal Membrane Pressure Injuries

• 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.
Mucosal Membrane Pressure Injuries
What’s the Difference?

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POP Quiz
Stage Me

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Wounds Commonly Labeled as Pressure Injuries
Soft Tissue Wounds
Moisture Associated Skin Damage (MASD)
MASD: Incontinence Associated Dermatitis (IAD)
MASD: Intertrigo

Intertrigo
http://www.wocn.org/page/Imagelibrary
Skin Tear Decision Algorithm

SKIN TEARS

CONTROL BLEEDING

ASSESS

CLEANSE

APPROXIMATE WOUND EDGES

GOALS OF TREATMENT

• TREAT THE CAUSE
• IMPLEMENT PREVENTION PROTOCOL
• MOIST WOUND HEALING
• AVOID TRAUMA
• PROTECT PERIWOUND SKIN
• MANAGE EXUDATE
• AVOID INFECTION

TREATMENT OPTIONS IN ACCORDANCE WITH LOCAL WOUND CONDITIONS

TYPE 1: NO SKIN LOSS

TYPE 2: PARTIAL FLAP LOSS

TYPE 3: TOTAL FLAP LOSS

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Dermatological Wounds

Peri-rectal herpes  http://images.wocn.org/photos/9

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Atypical Wounds
Atypical Wounds

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Vascular Wounds
Vascular Wounds

Venous stasis ulcer with Lipodermatosclerosis
http://www.wocn.org/page/ImageLibrary

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Vascular Wounds
POP Quiz
What Am I?
Pressure Injury Assessment
## NPUAP Evidence & Recommendation Table

### Strengths of Evidence

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The recommendation is supported by direct scientific evidence from properly designed and implemented controlled trials on pressure ulcers in humans (or humans at risk for pressure ulcers), providing statistical results that consistently support the recommendation (Level 1 studies required).</td>
</tr>
<tr>
<td>B</td>
<td>The recommendation is supported by direct scientific evidence from properly designed and implemented clinical series on pressure ulcers in humans (or humans at risk for pressure ulcers) providing statistical results that consistently support the recommendation. (Level 2, 3, 4, 5 studies)</td>
</tr>
<tr>
<td>C</td>
<td>The recommendation is supported by indirect evidence (e.g., studies in healthy humans, humans with other types of chronic wounds, animal models) and/or expert opinion</td>
</tr>
</tbody>
</table>

### Strengths of Recommendation

<table>
<thead>
<tr>
<th>Strength</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>🔄 🔄</td>
<td>Strong positive recommendation: definitely do it</td>
</tr>
<tr>
<td>🔄</td>
<td>Weak positive recommendation: probably do it</td>
</tr>
<tr>
<td>🔄</td>
<td>No specific recommendation</td>
</tr>
<tr>
<td>🔄 🔄</td>
<td>Weak negative recommendation: probably don’t do it</td>
</tr>
<tr>
<td>🔄 🔄 🔄</td>
<td>Strong negative recommendation: definitely don’t it</td>
</tr>
</tbody>
</table>
Components of Assessment

- **Skin assessment-Per NPUAP**
  - **Acute**: at least daily
  - **Outpatient**: Upon visit
  - **Home Care**: Completed on admission on each visit thereafter
  - **Long-Term**: On admission, with each dressing change, and at least weekly

NPUAP, 2014

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Components of Assessment

- **Skin assessment-Per NPUAP**
  - In individuals at risk of pressure injury:
    - conduct a comprehensive skin assessment within 8 hours of admission (or first visit in community settings)
      *(Recommendation-Probably do it)*
    - Increase frequency of skin assessments with deterioration in overall condition
      *(Recommendation-Probably do it)*

Strength of Evidence = C
Components of Assessment

Skin assessment-Per NPUAP

If there is a pressure injury, assess initially re-assess it at least weekly (Recommendation-Definitely do it)

Strength of Evidence = C

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Components of Assessment

Risk Assessment - Per NPUAP

• Use a risk assessment tool appropriate to the population - valid and reliable

(Recommendation-Probably do it)

• Use a structured approach to risk assessment that includes assessment of activity/mobility and skin status

(Recommendation-Definitely do it)

• Recognize additional risk factors - use clinical judgment

(Recommendation-Definitely do it)

Strength of Evidence = C

NPUAP, 2014

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Components of Assessment

Risk Assessment (e.g., Braden Scale)-Per NPUAP

• Conduct a structured risk assessment ASAP (but within a maximum of 8 hours after admission) to identify individuals at risk for developing a pressure injury (Recommendation-Definitely do it)

• Include a comprehensive skin assessment as part of every risk assessment to evaluate any alterations to intact skin (Recommendation-Definitely do it)

• Undertake a reassessment if there is any significant change in the individual’s condition (Recommendation-Definitely do it)

• Document all risk assessments (Recommendation-Definitely do it)

Strength of Evidence = C

NPUAP, 2014
Consider Special Populations & Locations

- **Pediatrics** (Baharestani et al., 2007; Schober-Flores, 2012)
- **Geriatrics** (Pieper, 2012; Stotts, 2012; Wysocki, 2012)
- **Bariatrics** (CDC, 2014; Camden, 2012; Kaplan & Schub, 2013)
- **ER** (Bryant & Nix, 2012; Denby & Rowlands, 2010; Hing & Bhuiy, 2012)
- **Perioperative** (Aronovitch, 2007; Bryant & Nix, 2012; Delmore & Lebovits, 2010; Walton-Geer, 2009)
- **ICU** (Cox 2013; Cox, 2011; Delmore & Lebovits, 2010; Strand & Lindgren, 2010; Senturan et al., 2009; Shanks et al., 2009)
POP Quiz
Stage Me Now

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What Am I?
PRESSURE INJURY DOCUMENTATION

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Pressure Injury Documentation

Skin & Wounds-Per NPUAP:
Skin- Document the findings of all comprehensive skin assessments
(Recommendation-Probably do it)
• Wounds - Document the results of all wound assessments
(Recommendation-Definitely do it)

Strength of Evidence = C

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Pressure Injury Documentation

Assess and document physical characteristics including:

- Location
- Stage
- Size
- Tissue type(s)
- Color
- Periwound condition
- Wound edges
- Sinus tracts
- Undermining
- Tunneling
- Exudate & odor

Strength of Evidence = C; Recommendation-Definitely do it

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Pressure Injury Documentation

• Observe for signs that indicate a change in treatment when required (e.g., wound improvement, wound deterioration, etc.)

  (Recommendation-Definitely do it)

• Address signs of deterioration immediately e.g., signs of clinical infection, etc.)

  (Recommendation-Definitely do it)

Strength of Evidence = C

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.....and don’t forget about

Pain assessment & documentation
POP Quiz
What Am I?

Perineal Dermatitis: http://images.wocn.org/photos/8

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What is it?
Pressure Injury Prevention
Components of Prevention

- **Skin assessment & Devices-Per NPUAP**
  - Inspect the skin under and around medical devices at least twice daily for the signs of pressure-related injury on the surrounding tissue
    
    *(Recommendation-Definitely do it)*
  
  - Conduct more frequent (greater than twice daily) skin assessments at the skin-device interface in individuals vulnerable to fluid shifts and/or exhibiting signs of localized/generalized edema
    
    *(Recommendation-Definitely do it)*

**Strength of Evidence = C**
Components of Prevention

Positioning per NPUAP

• Use the 30° tilted side-lying position (alternately, right side, back, left side) or the prone position if the individual can tolerate this and her/his medical condition allows

(Recommendation-Probably do it)

• Ensure that the heels are free of the surface of the bed

(Recommendation-Definitely do it)

Strength of Evidence = C
Components of Prevention

Positioning per NPUAP

• Limit head-of-bed elevation to 30° for an individual on bedrest unless contraindicated by medical condition or feeding and digestive considerations

  Strength of Evidence=C; Recommendation-Probably do it

• Reposition all individuals at risk of, unless contra-indicated.

  Strength of Evidence=A; Recommendation-Definitely do it

• Each time the patient is repositioned, conduct a brief skin assessment

  Strength of Evidence=C; Recommendation-Probably do it

• Limit the time an individual spends seated in a chair without pressure relief

  Strength of Evidence=B; Recommendation-Definitely do it
Pressure Injury Prevention

“Don’t & Consider”

• Do not use ring or donut-shaped devices
  Strength of Evidence = C; Recommendation-Definitely do it

• Consider applying a polyurethane foam dressing to bony prominences (e.g., heels, sacrum) for the prevention of pressure ulcers in anatomical areas frequently subjected to friction and shear
  Strength of Evidence = B; Recommendation-Probably do it

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Components of Prevention

Support Surfaces per NPUAP

• Consider the pressure redistribution support surface in use when determining the frequency of repositioning

Strength of Evidence = A; Recommendation—Probably do it

• Consider the need for additional features such as ability to control moisture and temperature when selecting a support surface

Strength of Evidence = C; Recommendation—Probably do it

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Support Surfaces

• Support surfaces **DO NOT** take the place of routine turning & positioning
  – maintains skin integrity & helps prevent breakdown
  – promotes normal pulmonary, kidney, and vascular function

• Leave minimal linen between patient and support surface so the patient receives the full benefit of the surface
Do Lift Slings Significantly Change the Efficacy of Therapeutic Support Surfaces?

NPUAP-White Paper March 2015

• Lack of high-level evidence in regard to slings increasing pressure injuries

• Clinicians need to use their clinical judgment and weigh the pressure injury risk for each patient
POP Quiz
POP QUIZ

Which of the following measures should be included in a patient’s pressure injury prevention care plan?

1. Limit daily fluid intake
2. Encourage the patient who’s confined to a chair to relieve pressure every hour
3. Turn and & reposition every 5 hours
4. Clean skin daily using hot water and soap

Ayello et al., 2016, Chapter 13, Wound Care Essentials: Practice Principles
Objectives Revisited

The participant has:

• Identified pressure injuries according to the NPUAP pressure ulcer classification system

• Recognized the documentation essentials for pressure injuries

• Described the necessary prevention strategies

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References


References


Nix, D. (2012) Skin and Wound Inspection and Assessment. In (pp. 108-121)


