Pressure Ulcers: What do the Surveyors See

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4 goals listed by AHCPR guidelines for PU risk and prevention.

1. **ID of at risk individuals** who need prevention, & specific factors placing them at risk.
2. **Maintaining & improving tissue tolerance** to pressure to prevent injury.
3. To **protect** against adverse effects of pressure, friction, & shear.
4. To **reduce the incidence** of pressure ulcers through education.

Friction—Rubbing against an external object such as a sheet.

Mechanical Load—Adverse affects of external mechanical forces such as a bed or chair.

Shear—Conflicting forces applied to an object or area in opposite directions at the same time. Sliding down in bed causes pressure & pull from both the bed itself & from the internal bony prominences.

“Pressure ulcers develop when soft tissue is pressed between a bony prominence & a firm surface with the pressure causing the capillaries to collapse. This in turn interrupts the tissue’s supply of O2 & nutrients. If the capillaries remain closed the surrounding tissue dies, sometimes in a very short time.”


Age related changes that contribute to pressure ulcer risk.

- **Thinning of the dermal epidermal junction.** Leads to wrinkling, tearing, loss of elasticity, increased skin permeability, & alterations in barrier function of the skin.
- **An altered immune response & decreased dermal vascularity.** Causes a greater potential for infection.

Areas of Risk for Formation of Pressure Ulcers

- Back of head
- Back of ears
- Shoulders
- Elbows
- Backbone
- Crest of pelvis
- Coccyx region
- Trochanter
- Buttocks
- Kneecaps
- Outside of knees
- Insides of knees
- Outside of feet
- Insides of feet
- Outside of ankles
- Heels
Powell found a 129% higher death rate for pts admitted to LTC who developed a pressure ulcer than those who did not.

Burd et. al reported a risk of death among geriatric patients who developed a pressure ulcer to be 4 times greater than the norm, & 6 times greater in those whose pressure ulcers did not heal.

Lawsuit judgments can run as high as $312 million for a single case.

Latest figures shows the average cost for treating a pressure ulcer is over 1 billion annually and additional $2.2 million in Medicare Hospital Days.

Cost for treatment $6,000 to $60,000 depending on size and stage.

Some sources indicate cost per ulcer can be up to $90,000.

Identification of Those At Risk

- Use of a validated risk assessment tool.
- Complete on admission & at periodic intervals.
- AHCPR recommends that risk prediction be an integral part of pressure ulcer prevention programs.

Difference Between Risk Assessment & Skin Assessment

Risk Assessment
- Determines if the resident is at risk for PUs or other skin problems.
- Looks at areas like mobility, activity, incontinence, nutrition, mental status, friction/shear.

Skin Assessment
- Looks at the resident’s skin to determine if skin problems or pressure ulcers already exist, or have worsened.

Braden Scale
- Sensory Perception
- Moisture
- Activity
- Mobility
- Nutrition
- Friction/Shear
- 23 points possible.
- Lower score = more risk.
- Risk predicting score of 18 or less.
- 18 for individuals with darker skin & those 75 & over.
- Direction for use in tool itself.
### Norton Scale

**Risk factors**

<table>
<thead>
<tr>
<th></th>
<th>4=good</th>
<th>3=Fair</th>
<th>2=poor</th>
<th>1=Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Condition</td>
<td>4=good</td>
<td>3=Fair</td>
<td>2=poor</td>
<td>1=Bad</td>
</tr>
<tr>
<td>Mental State</td>
<td>4=Alert</td>
<td>3=Apathetic</td>
<td>2=Confused</td>
<td>1=Stupor</td>
</tr>
<tr>
<td>Activity</td>
<td>4=Ambulant</td>
<td>3=Walking with help</td>
<td>2=Chair bound</td>
<td>1=Bed rest</td>
</tr>
<tr>
<td>Mobility</td>
<td>4=Full</td>
<td>3=Slightly limited</td>
<td>2=Very limited</td>
<td>1=Immobile</td>
</tr>
<tr>
<td>Incontinence</td>
<td>4=Not</td>
<td>3=Occasional</td>
<td>2=Usually urine</td>
<td>1=Double incontinence</td>
</tr>
</tbody>
</table>

- **Physical condition**
- **Mental condition**
- **Activity**
- **Mobility**
- **Incontinence**

- 20 points possible.
- Lower score = more risk.
- Risk predicting score of 16 or less.
- No directions or guidance for use.

### Minimum Data Set (MDS)

- **Bed Mobility**
- **Bladder Incontinence**
- **Bowel Incontinence**
- **Unplanned weight loss**
- **Risk of PU**
- **Pressure ulcer/Unstageable**
- **Worsening PU**
- **Trunk restraint**

- Any of these will trigger for risk in the CAs.

- Recent retrospective studies show MDS may have better predictive value than Braden or Norton. (Study was done with MDS 2.0)
- Problem is timing.

### Braden

**Fails to Address**

- pres. ulcer present
- pres. in last 90 days
- daily trunk restraint
- PVD

### MDS

**Fails to Address**

- friction
- shear

- Many residents are at highest risk of developing pressure ulcers during 1st 2 weeks after admission. *Exp.1st 48 hrs*.
- Prevention is based on eliminating or changing those risk factors that are amenable to intervention. In some situations not much can be done about sensory perception, activity, or mobility, but interventions must be put in place that lessen the effects of pressure because of these.

- “There is no accurate predictive value of risk assessment scales because they measure residents & not staff.”
  - Kenneth Olshansky, MD
Identify Specific Risk Factors

- **Immobility**—requires assist with bed mobility & transfers
- **Incontinence** of urine &/or bowel >daily
- **Impaired nutritional intake**—eats 1/2 or less of food offered (rarely/never eats a complete meal)
- **Altered level of consciousness**—unresponsive/sedated

Identify Risk Factors, cont’d

- **Impaired sensation**—limited ability to feel pain or discomfort over 1/2 of body
- **Anemia**—decreased oxygen carrying capacity of blood, affects circulation & wound healing
- **History of pressure ulcers**—do conditions still exist?
- **Restraint use**—can affect previously mentioned areas

Good - 30° Side-Lying Position

- Back pillow
- 30° head elevation
- No ankle/knees touching

Good - Heels Off Bed

- Heel - very small surface for weight distribution
- Recommended position for prevention of pressure on heels

Not Good - Heels On Bed

Not Good - Chair Shearing

- Sliding from a chair for a long period will cause shearing.
- What would be the results?
Prevention Strategies cont’d

- **Repositioning** at least q2h when in bed, q1h when up in chair
  - This is resident specific to their needs and skin condition

- Donut/ring devices **avoided**

- “Data do not indicate how often patients should be turned to prevent ischemia of soft tissue, but **two hours** in a single position is the **maximum** duration of time recommended for patients with **normal circulatory capacity**.”
- “Chair bound residents should be repositioned at least hourly.”
  - NPUAP 2009

Skin Care

- **Cleanse**
  - Cleanse with no-rinse, non-irritating ph balanced cleanser
  - Individualized bathing

Moisturize

- **Internal and external hydration**
- Use moisturizing cream if the skin is dry
- Use moisturizing lotion to prevent dry skin

Protect

- **Incontinence**
  - Commercial cleansers
  - Cleansing wipes
  - Soap and water

Protect

- **Types of barriers**
  - Sealant
  - Creams
    - Partially denuded skin with mixed incontinence
  - Ointments
    - Cost effective
Excessively Moist skin

- Maceration
  - MDS: New item Moisture Associated Skin Damage (MASD)
  - M 1040 H
- Denudation
- Fungal Infections

Is this a Stage 1 Pressure Ulcer?

- This is moisture associated skin damage from incontinence.

Moisture vs Pressure

Adapted from Defloor et al (2005), Nix (2005), Haugen (2010)

- Moisture must be present
- May be over bony prominence
- Skin shiny, wet, appearance
- Diffuse, multiple lesions
- Irregular edges
- Kissing ulcer
- Anal cleft, linear
- Partial thickness skin loss
- No necrosis
- Non-uniform redness, pink/white macerated periwound
- Pressure and/or shear must be present
- Most often over bony prominence, equipment related, skin folds
- Regular, raised edges
- Depth dependent on stage
- Necrotic tissue depended on stage
- Erythema, slough, necrotic, granulation, epithelial, infection
- Isolated, individual lesions

Skin Tears Treatment

- New item on the MDS
  - M1040 G Skin Tears
- Gently cleanse area
- Air dry or pat dry
- Approximate the skin tear flap if possible
- Apply moist non adherent wound dress
- Avoid film dressing
- Place an arrow to indicate the direction of the skin tear on the dressing
Assessment of the Pressure Ulcer: Parameters

- Location
- Staging
- Wound Measurement
- Undermining of tissue
- Tunneling of tissue
- Exudate
- Necrotic tissue
- Granulation tissue
- Epithelialization
- Periwound skin
- Pain

Assessment of the Pressure Ulcer: Measurement

- Recorded Length by Width by Depth
  - LXWXD
- Recorded in Centimeters (cm)

Length

- Measure the longest length from head to toe using a disposable device.

Width

- Measure widest width of the pressure ulcer side to side perpendicular (90° angle) to length.
- The depth of this pressure ulcer is 3.7 cm.
**Depth**

- Moisten a cotton-tipped applicator with 0.9% sodium chloride (NaCl) solution or sterile water.
- Place applicator tip in deepest aspect of the wound and measure distance to the skin level.

**Stages of a Pressure Ulcer**

- The following descriptions are from the National Pressure Ulcer Advisory Panel, 2014

**Stages of a Pressure Ulcer**

- Suspected Deep Tissue Injury (SDTI)
  - 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. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.

**Further description**

- Deep tissue injury may be difficult to detect in individuals with dark skin tones. Evolution may include a thin blister over a dark ulcer bed. The ulcer may further evolve and become covered by thin eschar. Evolution may be rapid, exposing additional layers of tissue even with optimal treatment.

**Deep Tissue Injury**

**Stages of Pressure Ulcers**

- Stage I
  - Intact skin with non-blanchable 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.
Stage I

- Further description:
  - The area may be painful, firm, soft, warmer, or cooler as compared to adjacent tissue. Stage I may be difficult to detect in individuals with dark skin tones. May indicate “at risk” persons (a heralding sign of risk).

Category/Stage 1 Pressure Ulcer

- Intact skin with non-blanchable redness of a localized area usually over a bony prominence.
- Darkly pigmented skin may not have visible blanching.
- Color may differ from the surrounding area.

Stages of Pressure Ulcers

- Stage II
  - Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink ulcer bed, without slough. May also present as an intact or open/ruptured serum filled blister.

Stage II

- Further description
  - Presents as a shiny or dry shallow ulcer without slough or bruising (Bruising indicates suspected deep tissue injury). This stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation.
Stage II

- Partial thickness loss of dermis presenting as:
  - Shallow open ulcer
  - Red or pink wound bed
  - Without slough

Category/ Stage 2 Pressure Ulcer

- May also present as an intact or open/ ruptured blister.

Stage III

- Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon, or muscle are not exposed. Slough may be present but does not obscure the depth of tissue. May include undermining and tunneling.

Categories/ Stage 3 Pressure Ulcer

- Full thickness tissue loss.
- Subcutaneous fat may be visible but bone, tendon or muscle are not exposed.
- Slough may be present but does not obscure the depth of tissue loss.
- May include undermining
Stage III

Stages of Pressure Ulcer

- Stage IV
  - Full thickness tissue loss with exposed bone, tendon, or muscle. Slough or eschar may be present on some parts of the ulcer bed. Often include, undermining and tunneling.

Stage IV

Further description
- The depth of a Stage 4 pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and these ulcers can be shallow. Stage 4 ulcers can extend into muscle and/or supporting structures (e.g., fascia, tendon or joint capsule making osteomyelitis possible. Exposed bone, tendon is visible or directly palpable.

Category/ Stage 4 Pressure Ulcer

- Full thickness tissue loss with exposed bone, tendon or muscle.
- Slough or eschar may be present on some parts of the wound bed.
- Often includes undermining and tunneling.
- Depth varies by anatomical location (bridge of nose, ear, occiput, and malleous ulcers can be shallow).

STAGE IV

Stages of Pressure Ulcer

- Unstageable
  - Full thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, gray, green or brown) and or eschar (tan, brown or black) in the ulcer bed.
Unstageable

- Further description
  - Until enough slough and or eschar is removed to expose the base of the ulcer, the true depth, and therefore stage, cannot be determined. 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.

Unstageable Non-Removable Device

- Ulcer covered with eschar under plaster cast
- **Known** but not stageable because of the non-removable device

Unstageable Slough and/ or Eschar

- **Known** but not stageable related to coverage of wound bed by slough and/ or eschar
  - Full thickness tissue loss
  - Base of ulcer covered by slough (yellow, tan, gray, green or brown) and/ or eschar (tan, brown or black) in the wound bed

M0300G Unstageable Suspected Deep Tissue Injury

- Purple or maroon area of discolored intact skin due to damage of underlying soft tissue. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.

M0300G Unstageable Suspected Deep Tissue Injury

- Localized area of discolored (darker than surrounding tissue) intact skin.
- Related to damage of underlying soft tissue from pressure and/ or shear.
- Area of discoloration may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.
- Deep tissue injury may be difficult to detect in individuals with dark skin tones.
**Eschar vs. Scab**

- Lengthy discussion on the differences between scabs and eschar is now on page M-5
  - Eschar: collection of dead tissue within the wound that is flush with the surface of the wound
  - Scab: dried blood cells and serum, sits on top of the skin, and forms over exposed wounds, such as wounds with granulating surfaces (like pressure ulcers, lacerations, evulsions).
- A PU that was staged as a 2 and now has a scab indicates it is a healing stage 2 & therefore, staging should NOT change (M-5)

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**Assessment of the Pressure Ulcer: Undermining**

- Generally appears as an area of skin ulceration at the margins of the ulcer
- Usually an indication of regression
- Measured in cm described according to a clockface
  - "0.7cm undermining from 9:00 to 12:00"

**Assessment of the Pressure Ulcer: Tunneling**

- A passageway under the surface of the skin
- Usually an indication of regression
- Measured in cm, described according to a clock face
  - "1.5cm tunneling at 10:00"
### Assessment of the Pressure Ulcer: Exudate
- Often called drainage
- Fluid extruded from a wound bed

### Assessment of the Pressure Ulcer: Epithelialization
- Migration of cells across the top of the wound bed
- Necessary for wound closure

### Assessment of the Pressure Ulcer: Granulation Tissue
- Pink/red moist tissue that contains new blood vessels and essential components to promote growth.
- Healthy components of a wound bed, presents like a "good beef steak"

### Assessment of the Pressure Ulcer: Necrotic Tissue
- "Dead tissue"
- May present as gray, brown, yellow slough or leathery brown, black eschar

### Slough

### Necrotic Tissue (Eschar)
Assessment of the Pressure Ulcer: Peri-wound skin

- Skin surrounding the wound
  - Erythema - redness of the intact skin
    - Some redness is normal response to healing
  - Maceration - dampness of the skin
    - Skin will look white, wrinkled
  - Induration - hardness of the skin

Assessment of the Pressure Ulcer: Pain

- Routine assessment/management of pain should occur ongoing, specifically with each dressing change and with any invasive procedure
  - Increasing pain may indicate regression or worsening of a wound

Reassessment of the Pressure Ulcer

- Wound bed and periwound skin should be reassessed daily or with every dressing change if less than daily
  - Documentation of wound progress should occur weekly unless there is evidence of worsening

- Evidence of wound healing is expected within 2-4 weeks
  - Increases in exudate, edema, necrosis, pain, and/or loss of granulation tissue indicate wound regression
Treatment of Pressure Ulcers

- “Goals of pressure ulcer treatment should not only include assessment and management of the wound, but overall assessment and management of the individual.”

- Ulcer healing may not be achievable in all cases; however, in the absence of complications, some improvement in ulcer characteristics should be expected in most patients.
  - AMDA Practice Guideline for Pressure Ulcers (2008)

Treatment Factors

- Ulcer location, size, and depth (full or partial thickness)
- Presence of undermining or tunneling
- Presence of necrotic tissue
- Type & amount of drainage
- Presence of granulation or epithelialization
- Presence of surrounding skin erythema, edema or induration
- Presence & severity of ulcer related pain

Treatment of the Pressure Ulcer: Wound Cleansing

- Cleanse initially and with each dressing change
  - Use normal saline or approved wound cleanser
  - Avoid skin cleansers or antiseptic agents i.e., betadine, alcohol, hydrogen peroxide, acetic acid
  - Avoid aggressive cleansing/scrubbing of the wound bed.

Cleansing

- Only use safe and effective ulcer irrigation pressures (4 to 15 pounds per square inch [PSI]).
  - Normal saline in a 35cc syringe with an 18 gauge needle delivers 8 psi
  - Water pik at lowest setting delivers 6 psi, mid setting 42 psi, high setting > 50 psi
  - Pressure settings too low are ineffective, too high can drive bacteria back into the wound bed and cause serious problems.

Cleansing

- Whirlpool treatments are appropriate for cleansing ulcers that have thick exudate or necrosis.
  - Clean wounds tend to dry out and are not appropriate for WP treatments
### Treatment of Pressure Ulcers

#### Dressing Selection

- **Stage I** - “Intact Skin”
  - Goal is to provide pressure relief, pressure relief.
  - Only appropriate dressing would be hydrocolloid (i.e., duoderm) if friction is a factor.
  - May not have any dressing at all.

- **Stage II** - IV clean wound covered with granulation tissue
  - Goal is a moist, clean wound bed.
  - If the wound is a shallow stage II, may only use moisture barrier or hydrocolloid.
  - May use hydrogel (water like jelly) covered with gauze.
  - Loosely pack with gauze if depth is present.

- **Stage III or IV exudating wounds**
  - Goal to absorb exudate, prevent breakdown of periwound skin and prevent drying out of wound bed.
  - Should use absorptive dressing (i.e., calcium alginate) with moisture barrier applied to periwound skin.
  - Whirlpool treatments daily to twice daily.

- **Stage III or IV necrotic wound**
  - Goal to debride necrotic tissue to promote healing.
  - EXCEPTION: stable heel ulcers with dry eschar (no edema, erythema, exudate (drainage)...aggressive pressure relief only.

### Not all ulcers require debridement

### Debridement

- **Types of debridement**
  - Sharp (knife, scalpel, scissors...must be done by a physician or licensed qualified staff i.e. therapist, RN).
  - Mechanical (wet to dry, whirlpool, wound irrigation).
  - Enzymatic (collagenase - FDA approved).
  - Autolytic (bodies own mechanism of fighting self digest...may use hydrocolloid).
Eschar

Sharp Debridement

Dressing Selection

- Cardinal rule—Keep wound bed moist and surrounding intact skin dry
What's wrong with this wound???

What's is wrong with the dressing that is being used?

Treatment Categories

- Polyurethane Film (Tegaderm™, Op-Site◊)
  - Adhesive and transparent
  - Stages 1-2
  - Occlusive and waterproof
  - Impermeable to bacteria & contamination
  - Change every 3-7 days

Treatment Categories

- Hydrocolloid (Duoderm®, Replicare®)
  - Adhesive wafers composed of gelatin, pectin and carbocymethyl-cellulose
  - Stages 1-4
  - Occlusive and waterproof
  - Moderately absorbent

Treatment Categories

- Hydrogels (Hypergel®, SoloSite◊)
  - Glycerin or water based gels, wafers, sheets & impregnated gauze with or without adhesive border
  - Stages 2-4
  - Non-adherent
  - Fills dead space
  - Easy to apply and remove

Treatment Categories

- Foams (PolyMem®, Allevyn◊)
  - Hydrophilic polyurethane foam, available in wafers, sheets and pillow with foam covering
  - Stages 2-4
  - Non adherent
  - Easy to apply and remove
  - Highly absorbent
### Treatment Categories

**Alginates (Sorbsan™, Kaltostat®)**
- Non woven fibers containing calcium sodium slats of alginic acid, available in pads or ropes
- Stage 2 wounds with a lot of exudate
- Stages 3-4
- Non-adherent
- Promotes moist wound healing
- Can be used on infected wounds

**Antimicrobial (ACTICOAT®, ALLEVYN Ag®)**
- Ionic silver & cadexomer idenit that provides sustain antimicrobial barrier to bacteria include MRSA and VRE
- Can be found in alginates, gels and polyurethane film
- Stage 2 wound if antimicrobial is needed
- Stages 3-4
- Manages bacterial burden
- Non-cytotoxic

**Collagen (Biostep®, Prisma®)**
- Provides the matrix for the body’s tissue structure. Stimulates wound healing
- Can be found as dried collagen matrix, hydrogel with collagen, hydrogel base
- Wounds that have stalled in healing
- Chronic wounds
- Pulls wound edges together

**Gauze, Dry or wet**
- Woven natural cotton fibers, available in pads, and rolls, sterile and non sterile
- Stages 2-4 especially if wound is deep or has tissue that needs debridement
- Facilitates moist to dry debridement

### Related Treatment Options

**Wound Vacs (KCI Vac®, V1STA ®)**
- Controlled negative pressure to promote wound healing
- Pulls infectious materials and excess interstitial fluid from the wound
- Pressure Ulcers, traumatic wounds, post op dehisced and surgical wounds
- FDA warning has been posted related to deaths
Surgical intervention

- Skin flap

Infection Control Practices

- Use clean gloves for each resident.
- When treating multiple ulcers on the same resident, attend to the most contaminated ulcer last.
- Remove gloves and wash hands between residents.

Infection Control

- Caregivers must wash their hands before contact with the supply of clean dressings or dressing supplies. Once the CG hands are soiled with secretions, they should not come into contact with the remaining clean supplies until gloves are removed and hands are washed.

Managing Infection

- Minimize colonization by effective wound cleansing and debridement.
- Protect PU from exogenous sources of contamination (feces, urine).
- Do not use swab cultures to dx wound infection since all PU are colonized. If a wound is not healing consider a 2 week trial of topical antibiotics (i.e., silver sulfadiazine, triple antibiotic).
- Institute appropriate systemic antibiotics for pts with s/s of systemic infections (sepsis, advancing cellulitis, osteomyelitis).

Infection Control

- Use sterile instruments to debride (sharp debridement should be done by a physician or qualified licensed staff).
- Use clean dressings rather than sterile dressings to treat pressure ulcers as long as dressing procedures comply with facility I.C. practices.

Assessment and Management of the Resident

- Monitor for potential wound related complications.
  - Cellulitis - inflammation around wound site, may advance beyond the wound.
  - Osteomyelitis - inflammation of the adjacent bone.
  - Sepsis - presence of infection in the blood.
### Assessment and Management of the Resident

- **Nutrition/Hydration**
  - Monitor and document intake
  - Offer assistance as necessary to ensure adequate intake
  - Protein, vitamin, mineral supplements as appropriate
    - Vitamin C and Zinc most commonly used

- **Pain**
  - Routine assessment every 4 hours, prior to dressing change, and any invasive procedures
  - Assessment of cause of pain, worsening pain may indicate worsening of the wound
  - Interventions to include pharmacologic and non-pharmacologic measures

- **Psychosocial**
  - Potential for depression and/or problem behavior due to wound presence, pain or change in function

  Appropriate management of depression symptoms and problem behaviors should be occurring

### Documentation

- Initial and ongoing risk assessments
- Weekly wound record to include assessment of wound bed and periwound skin
- Record of changes to treatment plan as wound changes (heals or regresses)

- **CAA that addresses:**
  - Review using Clinical Practice Guidelines or the Information CMS has provided in Appendix C

- **Care Plan to address**
  - Problem statement including resident specific risks and any actual wounds
  - Appropriate, realistic goals determined with interdisciplinary input
  - Interventions for prevention and/or treatment as appropriate
  - Interventions for management of the resident (nutrition, hydration, mobility, etc)
Types of Leg Ulcers

- Venous Insufficiency
- Arterial
- Diabetic Neuropathic

Venous Insufficiency Ulcer

- Increased venous pressure induced by incompetent valves
- Induces inflammation

Chronic stasis dermatitis

Arterial Ulcer

Diabetic Foot Ulcers
Diabetic Neuropathic Ulcer

References:

- National Pressure Ulcer Advisory Panel. (2007) Pressure Ulcer stages Revised by NPUAP

References:

- http://www.globalwoundacademy.com/