Wound Care Management in the Long-term Care Setting

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Objectives

1. Understand the pathophysiology of wounds and wound healing, including the role of nutrition and sarcopenia.
2. Discern the importance of a wound care team and interdisciplinary team approach to wound care in the LTC facility for improved outcomes and cost management.
3. Develop an understanding of evidenced-based wound care and current products available for different scenarios of wounds in long-term care and sub-acute rehab environments.
The Guidance of the F-Tag Regarding Wound Care

- F385 Provide adequate physician supervision for wound care
- F501 Involve the medical director in the wound care program
- F314 Regulations governing care of pressure ulcers, including prevention.
- F309 Quality of care for resident to avoid wounds
- F157 Notify physician of changes in patient status, including wounds

http://jmlevinemd.com/pressure-ulcer-regulations-in-the-nursing-home/
Quality Improvement Approaches for Wound Care

- Dr Kim Petrone, et al, at St Anns Community, Rochester NY
- Wound care team
  - Certified wound specialist (NP or MD)
  - Dietician
  - Nurse
  - Physical therapist
- During weekly rounds:
  - Defined primary etiology of the wound
  - Created treatment plan
- Developed facility formulary of product/topical treatments to include one main product from each broad category of therapies

Petrone, K. Improving Wound Care in Skilled Nursing Facility. JAMDA 15 (2014) B20-B21
Quality Improvement Approaches for Wound Care

• In 18 months:
  • Short stay residents had a decrease from 2.5% to 0.6% of new or worsening pressure ulcers
  • Number of high risk residents with pressure ulcers decreased from 9.1 to 5.5%
  • Residents with one or more unhealed pressure ulcer stage 1 or greater decreased from 11.5 to 5.1%
  • Cost for wound products utilized in the facility decreased by 9% in 3 years
  • Caregivers have greater understanding of evaluation and management of complex wounds
Quality Improvement Approaches for Wound Care

- Michelle Coffey, et al, in Texas did a QI for wound care with goal of decreasing wounds by 25%
- Wound care nurse reviewed all patients with wounds at weekly IDT mtgs
- Medical director arranged for outside wound care nurse expert to educate team by rounding with wound care nurse, med director and the two nurse practitioners
  - Reviewing all current wounds
  - General wound care management, products, supplement
- Weekly wound care rounds with wound care specialist, wound care nurse and advanced practice nurse and intermittently the med director

Michelle Coffey, CNS, RN, MSN, Liam Fry, MD, CMD, Lorena Arce Cardenas, LPN, Wendy Wing, CNS, MSN, RN; and Megan Skinner, MD. Interdisciplinary Approach to Pressure Ulcer Reduction. Quality Improvement/JAMDA 16 (2015) B16-B25
Quality Improvement Approaches for Wound Care

- Wound care nurse accompanied patient to any outside wound care appointments
- Wound care nurse did all skin assessments for current wounds and also for high risk patients
  - Early intervention with high risk patients
  - Weekly IDT meetings
  - Patient rounds to create individualized treatment plans
  - Daily treatments performed by wound care nurse
Quality Improvement Approaches for Wound Care

• Results:
  • Nosocomial pressure ulcer prevalence reduced by 63% in 6 months
  • Significant decreases in facility acquired pressure ulcers were seen as soon as six weeks after start of program
  • At 4 months, average prevalence was reduced from 6.5% to 3% or less
Wound Care is a Team Approach

• Designated wound care nurse – certified through Wound Management organizations
• Educating staff about wound etiology and management
• Routine wound rounds with wound care nurse, provider (physician or APP), floor nurse, PT/OT, dietitian
• Involve IDT to heighten awareness and surveillance
• Involve Medical Director in rounds and wound reports
• Develop facility formulary for products
Skin Failure: An Emerging Concept

- Pressure ulcer development
  - a significant predictor of mortality
  - associated with failure of multiple organ systems
- Reported incidence of pressure ulcers
  - in long-term care varies widely in the literature, ranging from 3.6% to 59.0%
  - in terminally ill nursing home residents is reported as high as 54.7%
- Pressure ulcers are also a major target for litigation in negligence claims against nursing homes, second only to falls
  - According to the Agency for Healthcare Research and Quality there are more than 17,000 lawsuits related to pressure ulcers annually.

Skin Failure: An Emerging Concept

• If skin no longer performs its role
  • maintaining vasomotor tone, body temperature, and water balance, and ceases protecting the body from infection and mechanical trauma,
  • it can be considered to be failing.

• Typically not included in the spectrum of multi-organ dysfunction syndrome (involved in up to 80% of all ICU deaths).

• Recognizing Skin Failure as a clinical syndrome
  • will encourage research
  • improve understanding of why the skin fails (eg pressure ulcers develop) during MOD, sepsis, or end of life conditions.
Skeletal Muscle Impact on Skin Health

- **Skeletal muscle**
  - influences energy and protein metabolism throughout the body
  - is a primary site for glucose uptake and storage
  - a reservoir of amino acids stored as protein
  - these are released when supplies are needed elsewhere in the body.
- These conditions occur with acute and chronic diseases, which decrease dietary intake while increasing metabolic needs.
- Such metabolic shifts lead to the muscle loss associated with sarcopenia and cachexia, resulting in a variety of adverse health and economic consequences.
- With loss of skeletal muscle,
  - protein and energy availability is lowered throughout the body
  - delayed recovery from illness and slowed wound healing
  - reduced resting metabolic rate
  - physical disability and poorer quality of life
  - higher health care costs.

Nutrition and sarcopenia

<table>
<thead>
<tr>
<th>Loss of lean body mass</th>
<th>Associated complications</th>
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<tbody>
<tr>
<td>-10%</td>
<td>• Decreased immunity</td>
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<tr>
<td></td>
<td>• Increased risk of infection</td>
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<tr>
<td>-20%</td>
<td>• Decreased wound healing</td>
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<tr>
<td></td>
<td>• Increased muscle weakness</td>
</tr>
<tr>
<td></td>
<td>• Increased risk of infection</td>
</tr>
<tr>
<td>-30%</td>
<td>• Difficulty sitting</td>
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<td></td>
<td>• Pressure ulcers</td>
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<tr>
<td></td>
<td>• Pneumonia</td>
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<tr>
<td></td>
<td>• Inability to heal</td>
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<tr>
<td>-40%</td>
<td>• Increased risk of death, usually from pneumonia</td>
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</tbody>
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Journal of the American Medical Directors Association 2016 17, 789-796 DOI: (10.1016/j.jamda.2016.04.019)
Wound Management

• Team approach for wound care
• Skin Failure as a concept of organ failure
• Skeletal muscle contributing to skin health or failure
• Wound care in the facility -- approach, products, developing plan of care
Wound Management
Updates in Care

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Kris Gaumer DO
As of April this year the National Pressure Ulcer Advisory Panel (NPUAP) announced a change in terminology from pressure ulcer to pressure injury and updated the stages of pressure injury.
So what changed...

The term “pressure injury” replaces “pressure ulcer” in the National Pressure Ulcer Advisory Panel Pressure Injury Staging System.

The change in terminology more accurately describes pressure injuries to both intact and ulcerated skin.
In the previous staging system Stage 1 and Deep Tissue Injury described injured intact skin, while the other stages described open ulcers.

This led to confusion because the definitions for each of the stages referred to the injuries as “pressure ulcers”.
In addition to the change in terminology, Arabic numbers are now used in the names of the stages instead of Roman numerals.

Instead of stage I, II,III, and IV, it’s now as simple as 1,2,3,4.
The term “suspected” has been removed from the Deep Tissue Injury diagnostic label.
Additional pressure injury definitions agreed upon at the meeting included:

- Medical Device Related Pressure
- Mucosal Membrane Pressure Injury
New definition of a Pressure Injury

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.
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.
Stage 1 Pressure Injury – Darkly Pigmented
Stage 1 Pressure Injury – Edema
Stage 2

- **Stage 2 Pressure Injury: Partial-thickness skin loss with exposed dermis**
  - 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
  - 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
  - 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 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 and/or bone are not exposed
- If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury
Stage 3 Pressure Injury with Epibole

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

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 the heel or ischemic limb should not be softened or removed
Unstageable Pressure Injury - Dark Eschar
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.
- 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.
Medical Device Related Pressure Injury - describes an etiology.

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 injuries cannot be staged.

https://members.nursingquality.org/NDNQCPressureUlcerTraining/module1/MucousMembrane1.asp
So why a Wound Care Nurse?
What does a wound nurse do?

They are your detective to the wound.
CNA observes wound

Staff nurse assess

Staff nurse alerts wound nurse

Dr. notified of treatment plan

Wound report shared with IDT

• Care plan adjusted and updated
• Care conference to review with resident and family members
The wound nurse documents a snapshot of what is in the wound and influencing the wound. This is the information the IDT needs to further treat the resident, not just the hole in the resident.

- **CORRECT Anatomical location**
- **Slough %**
- **Eschar %**
- **Granulation %**
- **Epithelialization**
- **Size L x W x D in cm**
- **Undermining**
- **Epibole**
- **Erythema**
- **Maceration**
- **Odor**
- **Exudates**
- **Surrounding tissue: Color, edema, firmness, intact, induration, pallor, lesions, texture, scar, rash, staining, moisture**
- **Any indicators of infection: fever, streaking, redness, increased drainage, odor, warmth, elevated WBC, induration, malaise, edema, weeping, increased pain, discolorations**

- **Any incontinence influences**
- **ADL's influencing the wound (is he resident up all day)**
- **WAS THIS WOUND PRESENT ON ADMISSION or FACILITY AQUIRED**
- **Wound etiology (pressure injury or otherwise) Partial or full thickness**
- **Pain. location, causative factors, intensity, quality, duration, alleviating factors, patterns, variations, interventions**
- **Interventions for healing: dietary supplements, vitamins, lab tests, turning repositioning schedules, support surface, cushion,**
- **Additions of padding, pillows, elevation, heel protection, incontinence management, skin protection(barrier ointments)**
- **Any conditions which would affect healing: Mobility/Turning Surface and Positioning Limitations, Nutritional Status, continence,**
- **Notation of abnormal labs, infections, deterioration of medical condition, non-compliance.**
- **Documenting current topical treatment plan, response to tx, modifications to plan, implementation of new orders, reason for not changing**
- **treatment plan, referrals if needed**
- **Resident, family and caregiver education.**
Case Study Lower Extremity

- **Background**
  - VC is a 74-year-old female with history of chronic DVT following surgery on her hip eight years ago
  - for the last five years has suffered from edema which worsens during the day
  - VC is now moved into your LTC nursing facility and spends most of her day sitting in her recliner in her room.
- **Wound History**
  - On initial assessment the patient suggested that her wound was the result of an insect bite three years ago, which never really healed.
  - She was treating it herself with a cream her sister gave her but over the last six months the wound has become larger, more painful and smelly, exuding large amounts of fluid.
  - You have been called in to assess the wound and treat the patient. What is your treatment plan?
Case Study Diabetic Ulcer

• **Background**
  • FJ is 65 years old and resides in a LTC facility.
  • He has poor vision and limited mobility because his hips are painful.
  • He was diagnosed with Type II diabetes three years ago and has been poorly maintained on oral hypoglycemic medications prior to coming to reside in a LTC setting.
  • FJ had been treating the wound himself for 3 months by bathing it in salt and water.

• **Wound History**
  • On initial assessment the patient had a large, necrotic wound on the base of his right big toe.
  • The wound was painless and dry.
  • The skin at the base of the toe was red.
  • You have been called in to assess the wound and treat the patient. What is your treatment plan?
Case Study Pressure Injury

- BT is a 76 year old female who has just moved into your LTC facility.
- She is 5’4” and 100 lbs.
- She has the following medical diagnoses: COPD, HX CVA on the right side, and HTN.
- BT becomes fatigued during meals and her intake is usually less than 50%.
- She is continent of bowel but occasionally incontinent of urine and requires her underclothing changed once or twice daily.
- Due to fatigue and paralysis she needs weight bearing assist to reposition when she is in bed or wheel chair, although she can move from side to side somewhat.
- BT has some limited perception of pressure but when she is uncomfortable she can express her discomfort.
- She uses 2 liters of oxygen via n/c and has had breakdown behind her ears before.
- BT can walk with a walker for distances less than 5 feet but uses a wheel chair the majority of the time.
- The CNA was changing BT and observed this wound on her buttock.
- What is your treatment plan?
Case Study Pressure Injury

- Mr Jones is an 86 y/o male admitted to the hospital two days ago with dehydration, malnutrition and dementia.
- You are coming on shift and making rounds. You assess his skin and note redness on his sacrum and heels.
- He is incontinent of both urine and feces and cannot move himself around in bed.
- What is the tx plan?
Case Study Trauma Wound

- This 82 y.o. female caught her leg on the edge of a wall in the facility greenhouse, which resulted in an open wound to the medial side of her left calf measuring 3.0 cm x 1.5 x 0.2 cm.
- The exudate being produced by the wound is so copious that it is running down her leg.
- The resident’s has a history of chronic venous insufficiency and clinical signs of venous disease.
- There is chronic edema influences, no active infection, and the resident wants to remain up and put of her room all day at activities.

- What is the treatment plan?
Knowing what to put on the wound

Whenever you have a wound, whether it’s a minor cut or a major incision, it’s crucial to care for it properly.

Part of the process includes wound care dressings. There are a variety of options when it comes to dressings, and to determine which is the best and most effective depends on what sort of wound you have.

If it’s too wet – dry it
If it’s too dry – add moisture
If it’s inflamed and irritated – soothe it
If it’s chronic – irritate it to stimulate it
If it’s palliative – provide comfort and symptom control
Topical Wound Management

- Non adherent dressings
- Debriding agents
- Antimicrobial
- Charcoal
- Liquid Barrier
- Gauze based
- Silver coated dressings
- Biologic
- NPWT

- Calcium Alginates
- Collagen Dressings
- Composite dressings
- Contact Layer dressings
- Foam dressings
- Hydrocolloid Dressings
- Hydrogel dressings
- Transparent films
Hydrogel

Foam
Calcium Alginate

Collagen
Liquid Barriers

Contact Layer
Antimicrobials

Silver coated
Hydrocolloidal

Gauze
Composite dressing

Occlusive making moisture proof tape
Negative Pressure Wound Therapy

BIOLOGIC DRESSINGS
Moisture Barriers and Moisturizers
Enzymatic Debrider

Vasolex Ointment
Silicone padding to pressure areas hard to fit
Buttocks “shear” Is it pressure?

Kyphosis Vertebrae
Sacral coccyx region, heels and toes
So, why a wounds care nurse?
As you can see they are your detective to the wound.

They can help determine the etiology, the best evidenced based treatment product, and is the link to the IDT team.

A wound nurse can help determine how the treatment plan will affect the resident’s ADL’s with the goal for the resident to still maintain their highest quality of life while residing in your facility, their home.
What are the residents and families concerns?
Is the wound new or old?
Can this wound resolve with the products the facility has available to use?
What co-morbid influences are there on the wound?
How is the residents nutritional status?
What issues if any could interfere with the goal toward wound resolve?
Once a treatment plan is in place it then flows through to the care plan. Has all interventions been reviewed and implemented? Is the treatment working?

A wound nurse is your constant...they are your weekly eyes on the wound to tell you if it’s progressing or not. They can determine if we as the care providers are on the right path.

If the wound is all of a sudden too wet then the topical dressing has to be changed to an absorptive.

- Is it showing signs of infection?
- Is it enlarging?

Having a wound nurse as your point person can help you with the responds of “I don’t know I haven’t seen it in 3 days” or “I’m not the regular nurse for this resident”.
There are other benefits than just in facility needs. They can be your prevention for excessive wound clinic appointments. There is no need to send a resident out to determine treatment choice if you have someone on staff that is knowledge.

Having a wound nurse lessens needs for external appointments at wound clinics. If the wound clinic is involved though then they can be the point person for communication and collaborate the treatment plan.

Example being if the wound clinic orders a brand name silver alginate that is not on your facilities formulary, the wound nurse has the knowledge there is other options equal in effectiveness and cost effective.
So many things go into wound care that may not be seen by the average lay person or even medical director.

Being able to accurately rely on the wound nurse assessment and read their documentation to get a full picture of the wound and the progression or lack thereof.

Knowing the wound care nurse knows when to alert you due to lack of progression and if infection is a concern.

Your wound care nurse can teach caregivers and staff how to best treat a wound and what not to do and what to look for through the wound healing process.

Documentation is our communication and when there is communication there is success.