Wound Care 101: Caring for Developmentally Disabled with Wounds

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SECTION M: SKIN CONDITIONS

Intent: The items in this section document the risk, presence, appearance, and change of pressure ulcers. This section also notes other skin ulcers, wounds, or lesions, and documents some treatment categories related to skin injury or avoiding injury. It is important to recognize and evaluate each resident's risk factors and to identify and evaluate all areas at risk of constant pressure. A complete assessment of skin is essential to an effective pressure ulcer prevention and skin treatment program. Be certain to include in the assessment process, a holistic approach. It is imperative to determine the etiology of all wounds and lesions, as this will determine and direct the proper treatment and management of the wound.

CMS is aware of the array of terms used to describe alterations in skin integrity due to pressure. Some of these terms include: pressure ulcer, pressure injury, pressure sore, decubitus ulcer, and bed sore. Acknowledging that clinicians may use and documentation may reflect any of these terms, it is acceptable to code pressure-related skin conditions in Section M if different terminology is recorded in the clinical record, as long as the primary cause of the skin alteration is related to pressure. For example, if the medical record reflects the presence of a Stage 2 pressure injury, it should be coded on the MDS as a Stage 2 pressure ulcer.

M0100: Determination of Pressure Ulcer Risk

M0100. Determination of Pressure Ulcer Risk	
↓ Check all that apply	
☐	A. Resident has a stage 1 or greater, a scar over bony prominence, or a non-removable dressing/device
☐	B. Formal assessment instrument/tool (e.g., Braden, Norton, or other)
☐	C. Clinical assessment
☐	Z. None of the above

Item Rationale

Health-related Quality of Life

- Pressure ulcers occur when tissue is compressed between a bony prominence and an external surface. In addition to pressure, shear force, and friction are important contributors to pressure ulcer development.
- The underlying health of a resident's soft tissue affects how much pressure, shear force, or friction is needed to damage tissue. Skin and soft tissue changes associated with aging, illness, small blood vessel disease, and malnutrition increase vulnerability to pressure ulcers.
- Additional external factors, such as excess moisture, and tissue exposure to urine or feces, can increase risk.

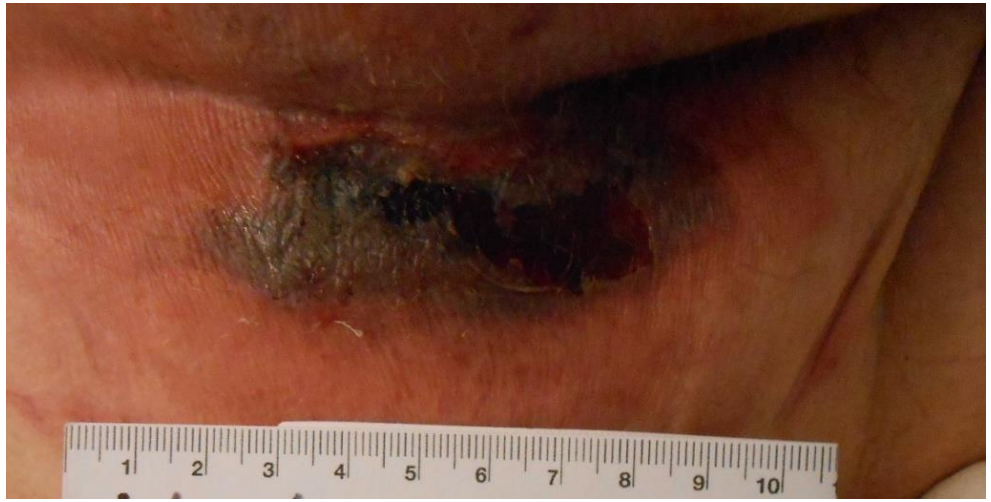
Planning for Care

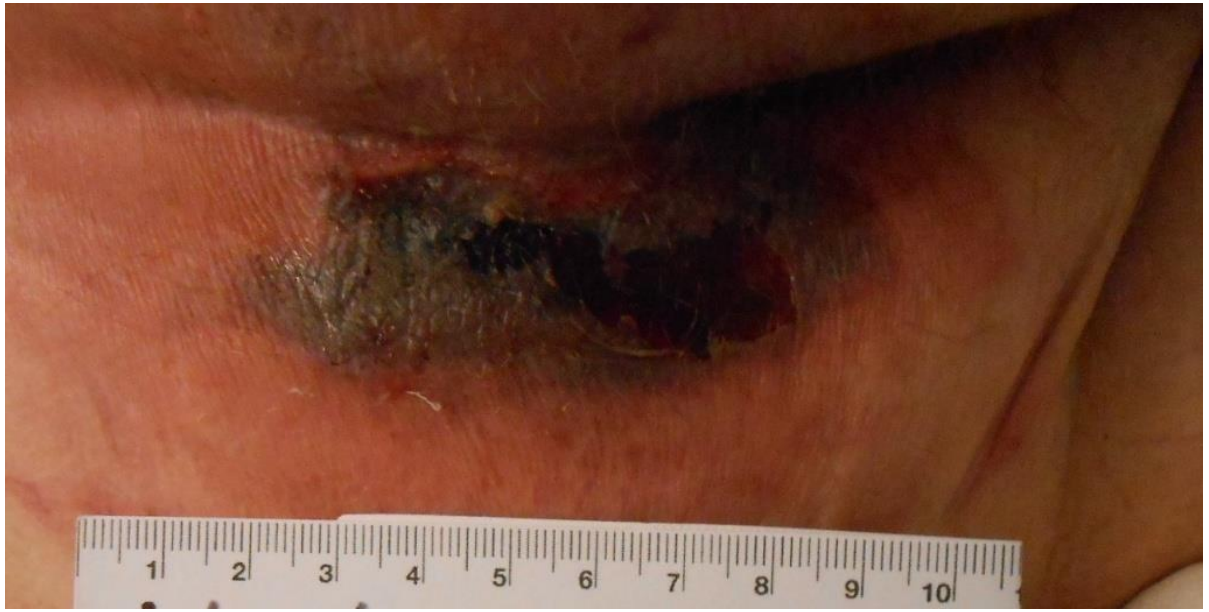
- The care planning process should include efforts to stabilize, reduce, or remove underlying risk factors; to monitor the impact of the interventions; and to modify the interventions as appropriate based on the individualized needs of the resident.

Source: CMS's RAI Version 3.0 Manual Page M-1

"It is imperative to determine the etiology of all wounds and lesions, as this will determine and direct the proper treatment and management of all wounds"

Four different etiologies…only one is pressure. Which one is pressure?





Pressure-Unstageable due to DTI

Coumadin Injury

Purpura

Diabetic Wound of the Lower Extremity-
Wagner Grade 0

Four different diagnosis.
None are pressure.

Sickle Cell Ulcer

Squamous Cell Carcinoma

Pyoderma Gangrenosum

Venous Stasis Ulcer secondary to Chronic Lymphadema

Sarcoidosis Lesions

Discoid Lupus Skin Lesions

Calciphylaxis

Arterial Ulcers

Venous Insufficiency Ulcers

Surgical Wounds

Malignant Lesions

Acanthosis Nigricans

Diabetic Dermopathy

Necrobiosis Lipoidica Diabeticorum

Bullosis Diabeticorum

Pemphigus

Collagen Vascular Diseases

Digital Sclerosis

Disseminated Granuloma Annulare

Diabetic Ulcer

Neuropathic Ulcer

Eruptive Xanthomatosis

Majorlin's Ulcer

Sweet's Syndrome

Burns

Necrotizing Infection

Radiation Necrosis Ulcer

Pyoderma Gangrenosum

- Typical (Classic)
- Atypical
- Peristomal
- Pustular
- Bullous
- Vegetative

Trauma

Skin Tears

Pemphigoid

- Bullous
- Cicatricial
- Gestationis

Vasculitis

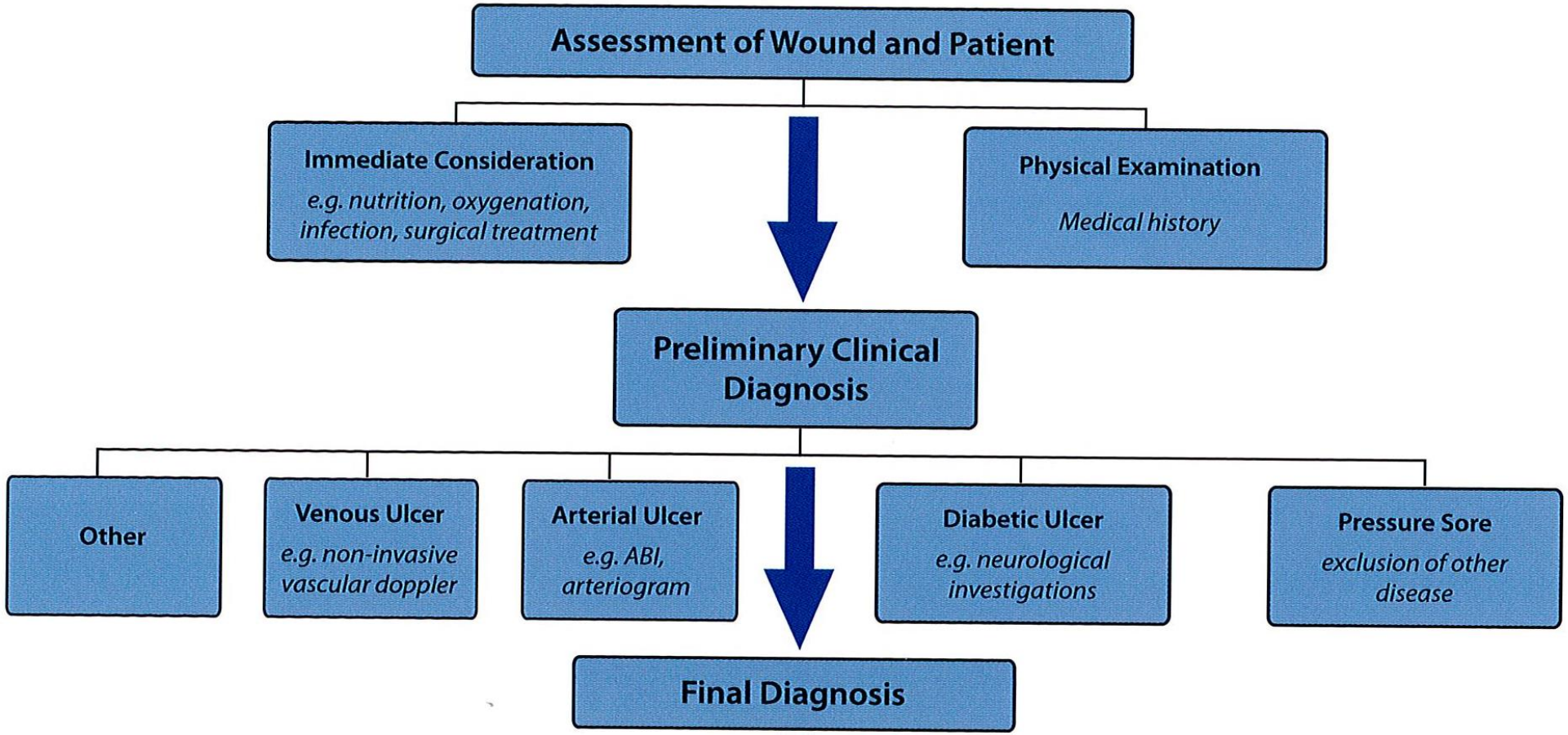
I. Review of a Resident with Non Pressure-Related Skin Ulcer/Wound.

Residents may develop various types of skin ulceration. At the time of the assessment and diagnosis of a skin ulcer/wound, the clinician is expected to document the clinical basis (e.g., underlying condition contributing to the ulceration, ulcer edges and wound bed, location, shape, condition of surrounding tissues) which permit differentiating the ulcer type, especially if the ulcer has characteristics consistent with a pressure ulcer, but is determined not to be one. This section differentiates some of the different types of skin ulcers/wounds that are not considered to be pressure ulcers.

Mega Rule Screenshot


Trust me.
I'm a doctor.

At the time of the assessment, clinicians (physicians, advance practice nurses, physician assistants, and certified wound care specialists, etc.) should document the clinical basis (for example, type of skin injury, location, shape, edges and wound bed, condition of surrounding tissues) for any determination that an injury is not pressure-related, especially if the injury has characteristics consistent with a pressure injury, but is determined not to be one.



How long does it take to diagnose a wound or skin issue?

Diagnosed as Pressure and Moisture

Marjolin Ulcer?

Duhring's Disease (aka Dermatitis herpetiformis)

9-28-2016

10-26-2016

How long does it take to diagnose a wound or skin issue?

Venogram

CT Scan

Transcutaneous Oxygen Monitoring

Wedge Biopsy

Debridement

Near Infrared Spectroscopy

Laboratory Draws

Diagnosis of Exclusion

Bacterial Fluorescence

Arterial Ultrasound

X-ray

Tissue Cultures

Ankle-Brachial Index

Venous Ultrasound

Punch Biopsy

pH Testing

Pressure Mapping

Arteriogram

MRI Scan

Tissue Destruction Classification Systems

Tissue destruction classification systems have been developed to assist describing the depth of penetration of wounds. Some systems are specific to the wound etiology such as the pressure ulcer staging system. Documenting the levels of tissue destruction correctly is critical for communication between clinicians and in some instances, required for reporting to CMS. For instance, CMS regulatory mandates require accurate staging for reporting, reimbursement, and tracking of pressure ulcers in different health care settings.

All Wounds

All wounds, regardless of etiology, can be assessed as either partial or full-thickness.

Classification of Wound by Thickness of Tissue Destruction

Photos courtesy of Mobile Wound Solutions, Kansas City, MO.

Partial-thickness

Extends through the epidermis (first layer of skin), but not through dermis (second layer)

Photos courtesy of Mobile Wound Solutions, Kansas City, MO.

Full-thickness

Extends through epidermis and dermis; may involve subcutaneous tissue, muscles, joint capsule, bone, etc.

Different Classification Scales for Assessing Tissue Destruction

Classification of Wound by Thickness of Tissue Destruction

Partial-thickness
Extends through the epidermis (first layer of skin), but not through dermis (second layer)

Full-thickness
Extends through epidermis and dermis; may involve subcutaneous tissue, muscles, joint capsule, bone, etc.

Assessment by Thickness of Tissue Destruction

Rev. 2009

International NPUAP-EPUAP Pressure Ulcer Classification System

For more information, visit www.npuap.com

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.	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).
Stage II	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 blister.	Presents as a shiny or dry shallow ulcer without slough or bruising.* This stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation*. Bruising indicates suspected deep tissue injury.
Stage III	Full-thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscles are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.	The depth of a Stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have 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.
Stage IV	Full-thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunneling.	The depth of a Stage IV 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 IV ulcers can extend into muscle and/or supporting structures (e.g., fascia, tendon or joint capsule) making osteomyelitis possible.
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 wound bed.	Until enough slough and/or eschar is removed to expose the base of the wound, 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.
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. The area 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. Evolution may include a thin blister over a 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 optimal treatment.

Diabetic Foot Ulcers

Wagner Scale for Diabetic Foot Ulcers

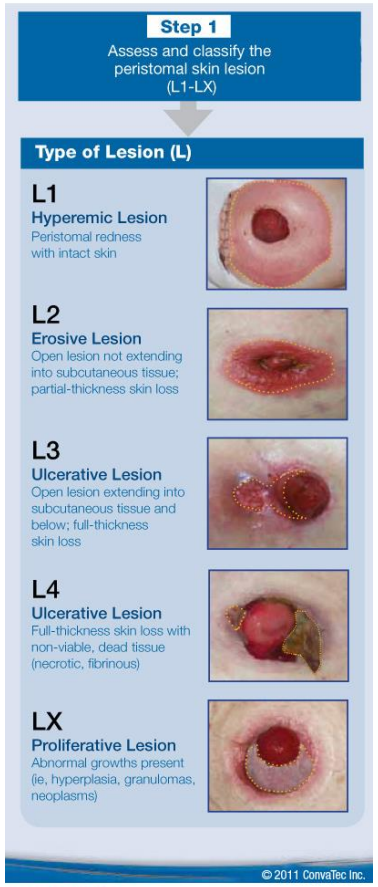
Grade	Description
Grade 0	Pre-ulcerous lesion, healed ulcer, bony deformity
Grade 1	Superficial ulcer without subcutaneous tissues involvement
Grade 2	Deep ulcer, penetration through the subcutaneous tissue; may have exposed bone, tendon or ligament or joint capsule
Grade 3	Deep ulcer with cellulitis, abscess formation, or osteomyelitis
Grade 4	Localized gangrene of digit
Grade 5	Extensive gangrene involving whole foot

1981

Old System	New System	Summary
First degree	Not classified	Fiery red, very painful, but not blistered
Second degree	Partial-thickness	Extend through the epidermis and may penetrate into the dermis. Healing by regeneration; full function and appearance should be recovered.
Third degree	Full-thickness	Penetrate the dermis and may involve subcutaneous tissue. Hair follicles, sebaceous glands, and sweat glands are destroyed. Healing occurs through scar formation and re-epithelialization
Fourth degree	Complete burns	Extend into the subcutaneous tissue to include muscle, fascia or bone. They may generate systemic toxic reactions or rapidly lead to infection or sepsis.

Still in Transition

2010



Payne-Martin Skin Tear Classification System[7,54]

Category I	No tissue loss, may be linear (tears without tissue loss, resembling an incision) or flaps (epidermal flap covers the dermis to within 1 mm of the edge).
Category II	Tissue loss. Scant, partial tissue loss = 25% or less of epidermal flap lost. Moderate to large partial tissue loss = more than 25% of epidermal flap is lost.
Category III	Complete tissue loss; no epidermal flap.

1996

1993

University of Texas Classification System of Diabetic Foot Ulcers[3]

	0	I	II	III
A		Pre-or post-ulcerative lesion	Superficial wound, not involving tendon, capsule, or bone	Wound penetrating to tendon or capsule
B		Pre-or post-ulcerative lesion	Pre- or post-ulcerative lesion, completely epithelialized with infection	Superficial wound, not involving tendon, capsule, or bone with infection
C		Pre- or post-ulcerative lesion, completely epithelialized with	Superficial wound, not involving tendon, capsule, or bone with ischemia	Wound penetrating to tendon or capsule with ischemia
		ive lesion, ialized with mia	Superficial wound, not involving tendon, capsule, or bone with infection and ischemia	Wound penetrating to tendon or capsule with infection and ischemia

Rev. 2010

Skin Tears

Star Skin Tear Classification System[13,39]

Category 1a
A skin tear where the edges can be realigned to the normal anatomical position (without undue stretching) and the skin or flap colour is not pale, dusky or darkened.

Category 1b
A skin tear where the edges can be realigned to the normal anatomical position (without undue stretching) and the skin or flap colour is pale, dusky or darkened.

Category 2a
A skin tear where the edges cannot be realigned to the normal anatomical position and the skin flap colour is not pale, dusky or darkened.

Category 2b
A skin tear where the edges cannot be realigned to the normal anatomical position and the skin or flap colour is pale, dusky or darkened.

Category 3
A skin tear where the skin flap is completely absent.

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

Partial-thickness loss of skin with exposed dermis, presenting as a shallow open ulcer. The wound bed is viable, pink or red, moist, and may also present as an intact or open/ruptured blister. Adipose (fat) is not visible and deeper tissues are not visible. Granulation tissue, slough and eschar are not present. This stage should not be used to describe moisture associated skin damage including incontinence associated dermatitis, intertriginous dermatitis (inflammation of skin folds), medical adhesive related skin injury, or traumatic wounds (skin tears, burns, abrasions).

Stage 3 Pressure Ulcer: Full-thickness skin loss

Full-thickness loss of skin, in which subcutaneous fat may be visible in the ulcer and granulation tissue and epibole (rolled wound edges) are often present. Slough and/or eschar may be visible but does not obscure the depth of tissue loss. 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 wound bed, it is an Unstageable PU/PI.

Mega Rule Screenshot

Full Thickness


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Guide de mesure pour plaie
Jeter après un seul usage.
Date


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Guide de mesure pour plaie
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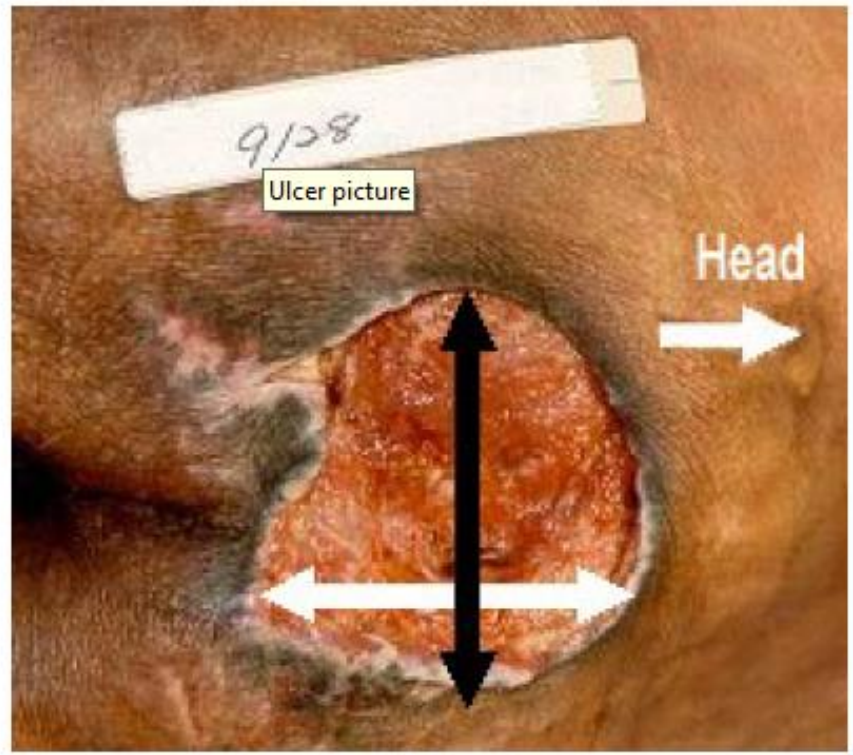
Wound Measurement

1. Measurement is based on observation of the Stage 3, Stage 4, or unstageable pressure ulcer due to slough and/or eschar after the dressing and any exudate are removed.
2. Use a disposable measuring device or a cotton-tipped applicator.
3. Determine longest length (white arrow line) head to toe and greatest width (black arrow line) of each Stage 3, Stage 4, or unstageable pressure ulcer due to slough and/or eschar.
4. Measure the longest length of the pressure ulcer. If using a cotton-tipped applicator, mark on the applicator the distance between healthy skin tissue at each margin and lay the applicator next to a centimeter ruler to determine length.



Standard Tissue Types

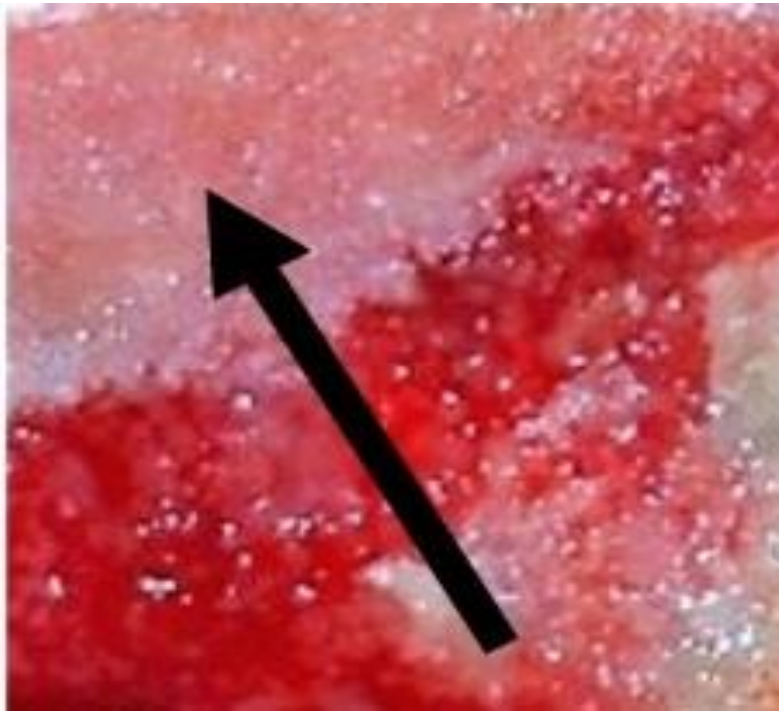
DEFINITIONS

EPITHELIAL TISSUE

New skin that is light pink and shiny (even in persons with darkly pigmented skin). In Stage 2 pressure ulcers, epithelial tissue is seen in the center and edges of the ulcer. In full thickness Stage 3 and 4 pressure ulcers, epithelial tissue advances from the edges of the wound.

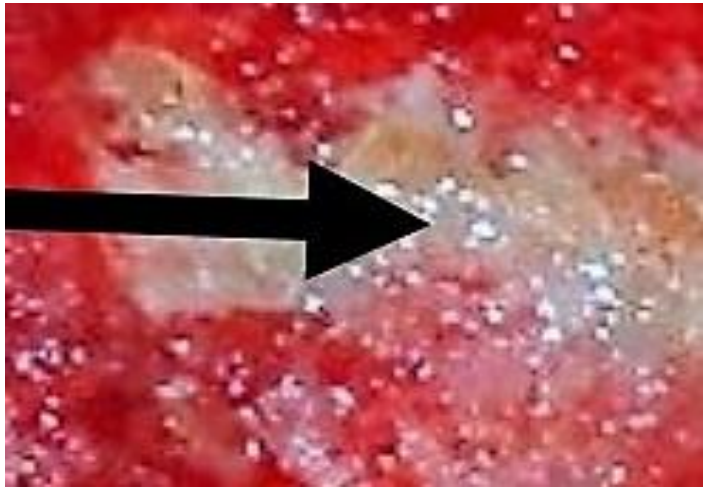
GRANULATION TISSUE

Red tissue with "cobblestone" or bumpy appearance, bleeds easily when injured.



SLOUGH TISSUE

Non-viable yellow, tan, gray, green or brown tissue; usually moist, can be soft, stringy and mucinous in texture. Slough may be adherent to the base of the wound or present in clumps throughout the wound bed.



ESCHAR

Dead or devitalized tissue that is hard or soft in texture; usually black, brown, or tan in color, and may appear scab-like. Eschar is usually firmly adherent to the base of the wound and often the sides/edges of the wound.

Stable Eschar-Do Not Touch	Unstable-Consider having specialist remove
• Dry • Firmly Adherent • Eschar Intact • Peri-wound has no erythema, no fluctuance, no bogginess, no maceration, no warmth, no redness, no induration or swollen tissue	• Drainage • Edges peeling or lifting up • Eschar does not cover the entire wound • Peri-wound may have erythema, fluctuance, bogginess, temperature or color changes, maceration, warmth or redness, induration, or swollen tissue

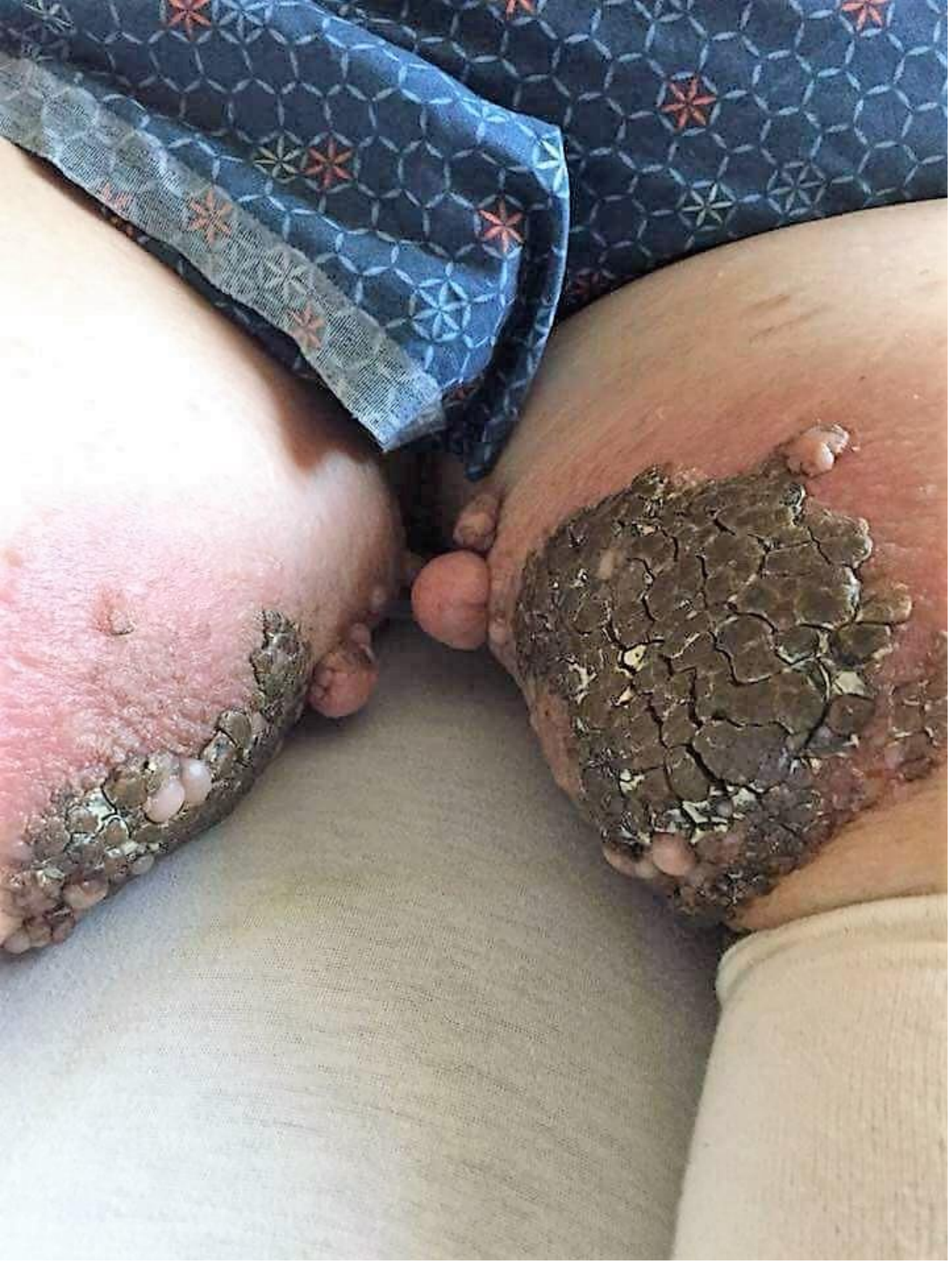
Stable eschar (i.e., dry, adherent, intact without erythema or fluctuance) on the heels serves as "the body's natural (biological) cover" and should only be removed after careful clinical consideration, including ruling out ischemia, and consultation with the resident's physician, or nurse practitioner, physician assistant, or clinical nurse specialist if allowable under state licensure laws.

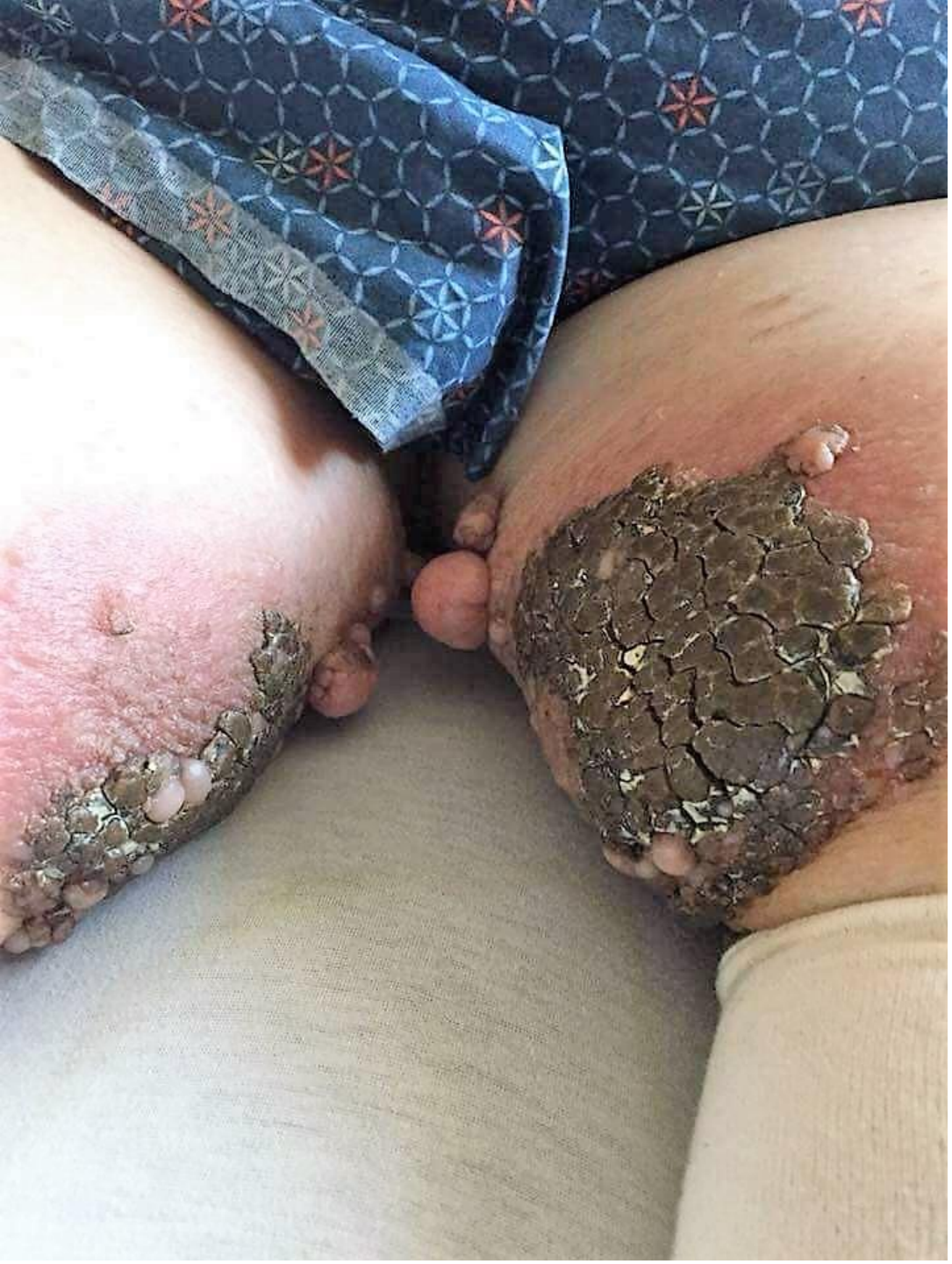
Other Tissue Types

Fungating Tumor


Wound Measuring Guide
Discard after single use.
Guide de mesure pour plaie
Jeter après un seul usage.
Name/Nom
Date

Fungating Tumor





Acanthosis Nigricans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Date

Plantar Wart

Wound Exudate

Commons Types

Purulent-opaque, milky and sometimes green, yellow or brown

Sanguineous-reddish, thin and watery

Serosanguineous-clear, pink, thin and watery (blood-tinged)

Serous-clear, amber, thin and watery

Drainage Amount

None-dry wound bed

Scant-wound is moist. Dressing will have no more than a drop or two of drainage present or dressing may be dry

Small-minimal amount of drainage covering less than 25% of the dressing

Moderate-wound is wet and drainage covers 25-75% of the dressing

Large (Copious)-wound has significant fluid that may fill the wound and drainage will cover more than 75% of the bandage. Peri-wound may shows signs of maceration

When to Assess

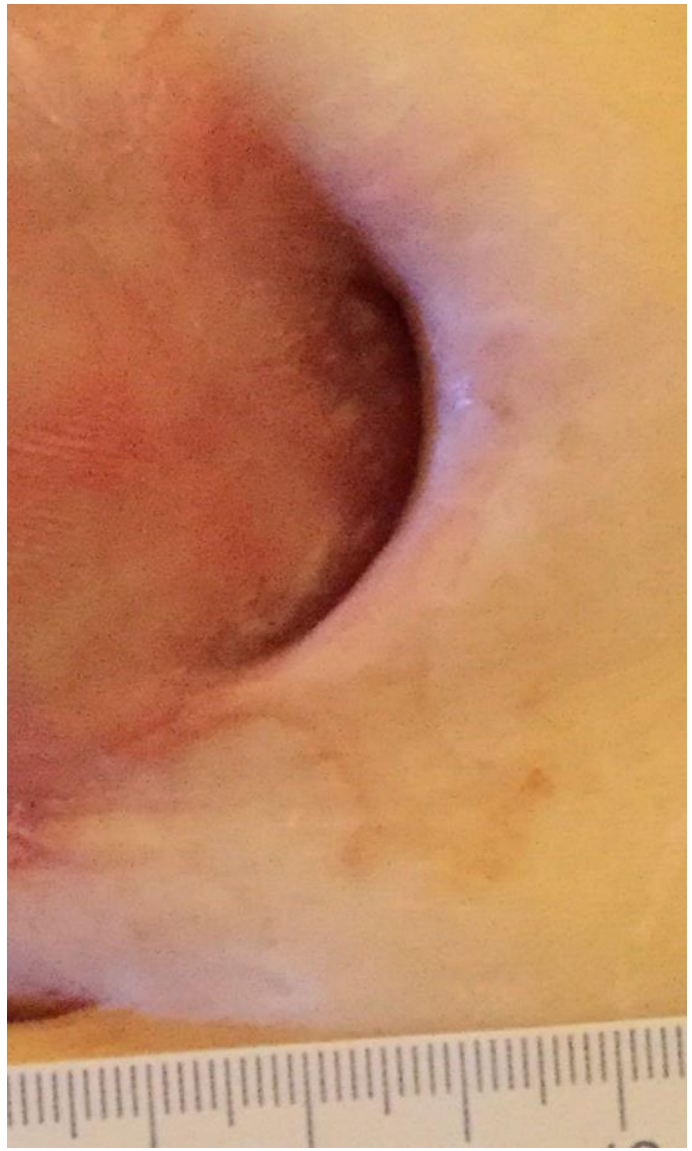
DEFINITION

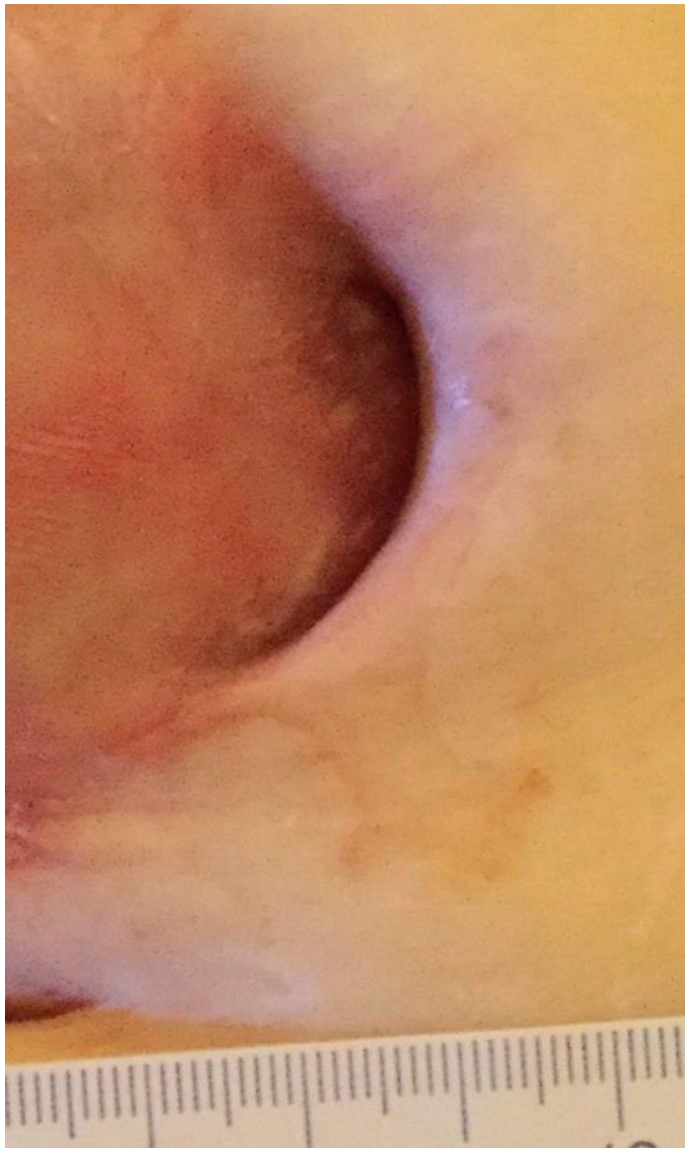
ON ADMISSION

As close to the actual time of admission as possible.

Wound Terminology

Demarcation or
Demarcating or
Dry Gangrene





Epibole
Or
Epiboly

Erythema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Ruler
Date Measured
Length
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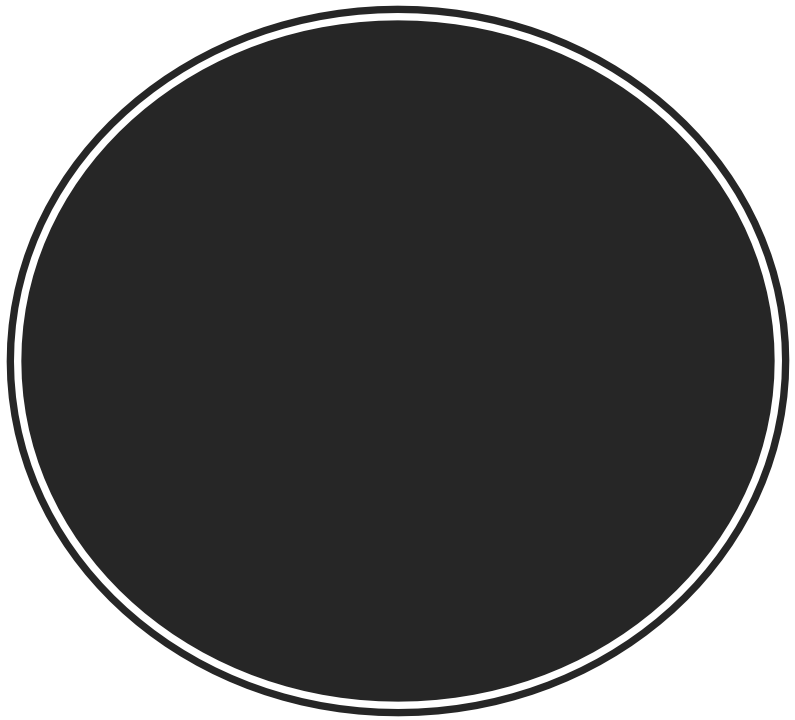
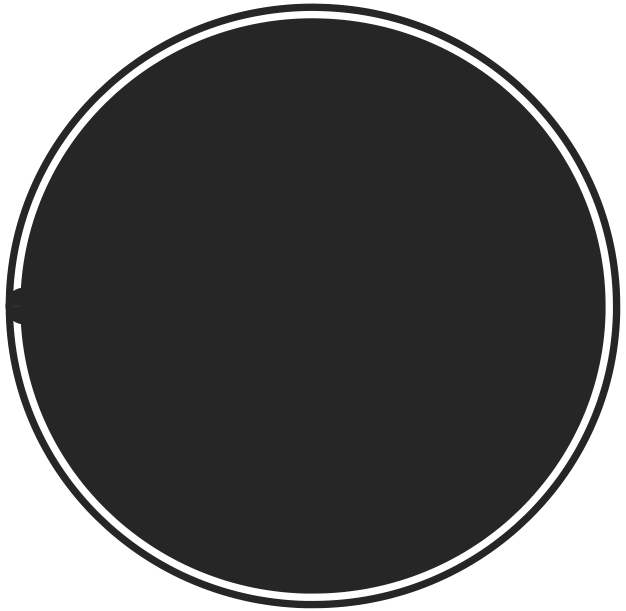
Heralding Sign

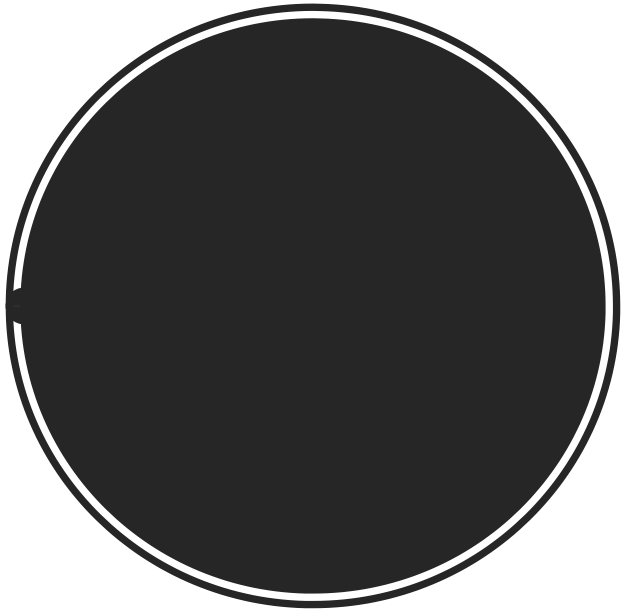

Wound Measuring Guide
SPECIALTY MATTRESSES
Pressure Overlays · Alternating Pressure
Low Air Loss / Alternating Pressure · Lateral Rotation
Ergo Midwest, Inc.
1-877-387-ERGO

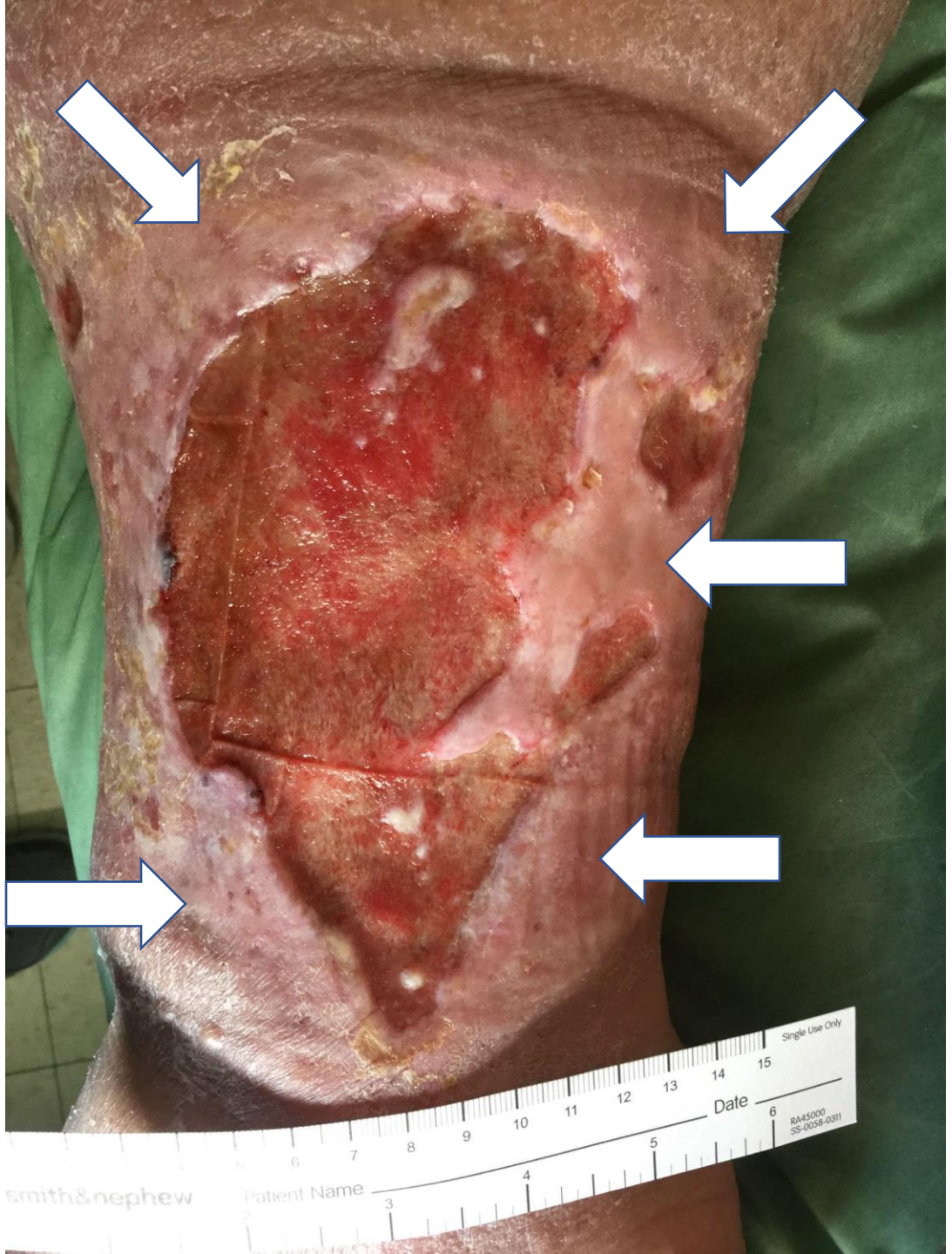


Hypergranulation Tissue



Induration

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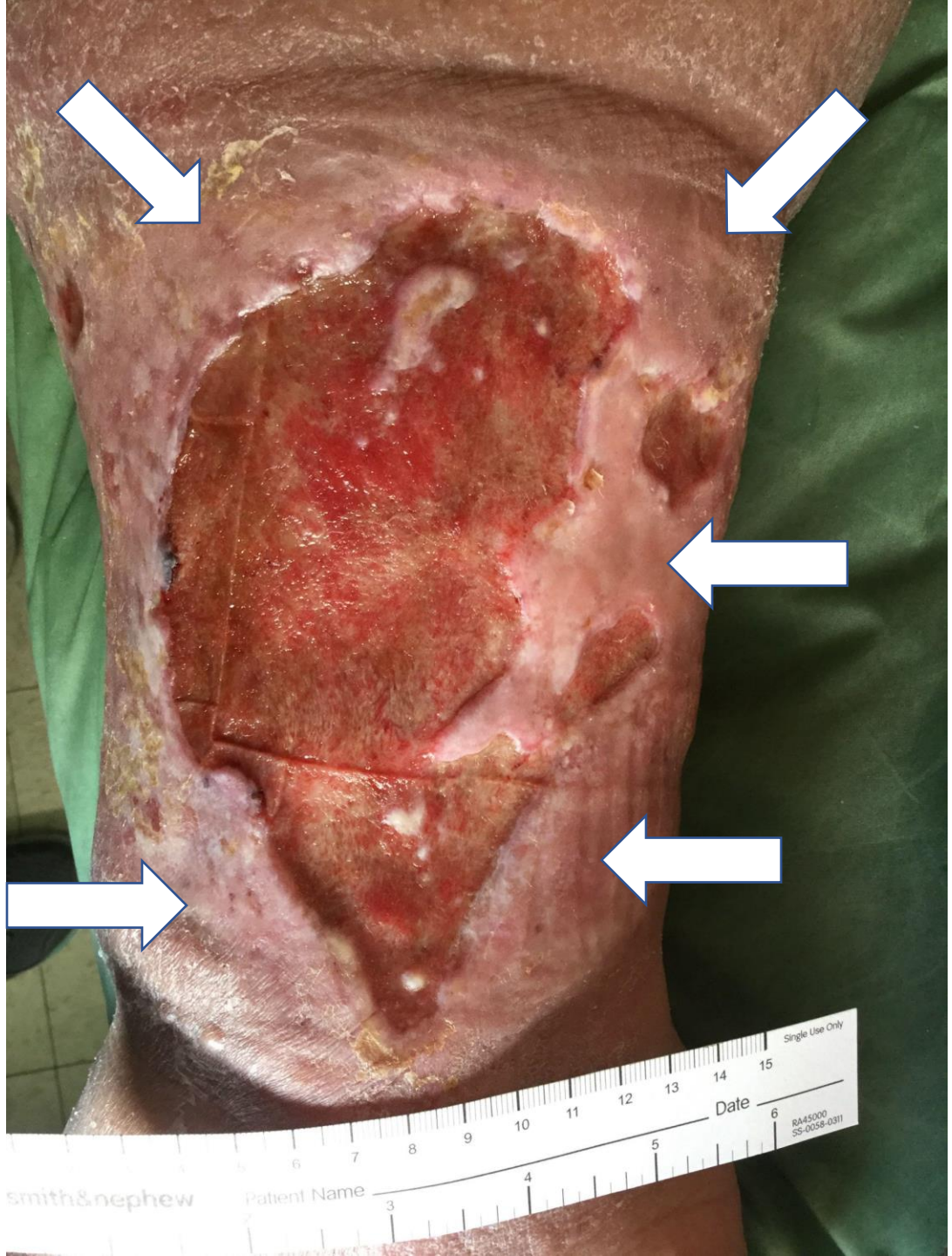
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Patient Name

Wound Characteristics		
• Even wound margins • Gangrene or necrosis • Deep, pale wound bed • Blanched or purpuric periwound tissue • Severe pain • Cellulitis • Minimal exudate	Even wound margins Deep wound bed Cellulitis or underlying osteomyelitis Granular tissue present unless PVD is present Low to moderate drainage	Irregular wound margins Superficial wound Ruddy, granular tissue Usually no pain Frequently moderate to heavy exudate
Patient Assessment		
• Thin, shinny, dry skin • Hair loss on ankle & foot • Thickened toenails • Pallor on elevation and dependent rubor • Cyanosis • Decreased temperature • Absent or diminished pulses	Diminished or absent sensation in foot Foot deformities Palpable pulses Warm foot Subcutaneous fat atrophy	Firm edema Dilated superficial veins Dry, thin skin Evidence of healed ulcers Periwound and leg hyperpigmintation Possible dermatitis

Arterial Ulcers	Diabetic Ulcers	Venous Ulcers
Wound Characteristics		
• Even wound margins • Gangrene or necrosis • Deep, pale wound bed • Blanched or purpuric periwound tissue • Severe pain • Cellulitis • Minimal exudate	• Even wound margins • Deep wound bed • Cellulitis or underlying osteomyelitis • Granular tissue present unless PVD is present • Low to moderate drainage	• Irregular wound margins • Superficial wound • Ruddy, granular tissue • Usually no pain • Frequently moderate to heavy exudate
Patient Assessment		
• Thin, shinny, dry skin • Hair loss on ankle & foot • Thickened toenails • Pallor on elevation and dependent rubor • Cyanosis • Decreased temperature • Absent or diminished pulses	• Diminished or absent sensation in foot • Foot deformities • Palpable pulses • Warm foot • Subcutaneous fat atrophy	• Firm edema • Dilated superficial veins • Dry, thin skin • Evidence of healed ulcers • Periwound and leg hyperpigmintation • Possible dermatitis

Medical Adhesive-Related Skin Injury (MARSI)

Similar to medical device related pressure injuries, MARSI describes an etiology of injury. In the case of MARSI the etiology is trauma, not pressure.

The FDA describes medical adhesive tape or adhesive bandages as “a device(s) intended for medical purposes that consists of a strip of fabric material or plastic, coated on one side with adhesive…”

Elderly patients and neonates are at high risk for MARSI. MARSI can be prevented by careful selection of adhesive products, correct application and removal.

The types of skin injuries caused by medical adhesives include:

- Mechanical trauma
  - Epidermal stripping
  - Tension injury or blister
  - Skin tear
- Dermatitis
  - Irritant contact dermatitis
  - Allergic dermatitis
- Other
  - Maceration from trapped moisture
  - Folliculitis

There is some overlap in terminology, however, the important thing to remember is that MARSI should not be counted as pressure injuries.

M0100: Determination of Pressure Ulcer Risk

M0100. Determination of Pressure Ulcer Risk	
↓ Check all that apply	
☐	A. Resident has a stage 1 or greater, a scar over bony prominence, or a non-removable dressing/device
☐	B. Formal assessment instrument/tool (e.g., Braden, Norton, or other)
☐	C. Clinical assessment
☐	Z. None of the above


dundee bank

- **Check B if a formal assessment has been completed.** An example of an established pressure ulcer risk tool is the *Braden Scale for Predicting Pressure Sore Risk*©. Other tools may be used.

- **Check C if the resident's risk for pressure ulcer development is based on clinical assessment.** A clinical assessment could include a head-to-toe physical examination of the skin and observation or medical record review of pressure ulcer risk factors. Examples of risk factors include the following:

  — impaired/decreased mobility and decreased functional ability

  — co-morbid conditions, such as end stage renal disease, thyroid disease, or diabetes mellitus;

  — drugs, such as steroids, that may affect wound healing;

  — impaired diffuse or localized blood flow (e.g., generalized atherosclerosis or lower extremity arterial insufficiency);

  — resident refusal of some aspects of care and treatment;

  — cognitive impairment;

  — urinary and fecal incontinence;

  — under nutrition, malnutrition, and hydration deficits; and

  — healed pressure ulcers, especially Stage 3 or 4 which are more likely to have recurrent breakdown.

	RISK FACTORS-If the answer is yes place check in the box. If no leave blank	Date	Date	Date	Date
1	Moribund (Actively dying, imminently terminal)				
2	Impaired/decreased mobility, decreased functional ability				
3	Restraints in place				
4	Comorbid conditions (Does the client have 2 or more chronic diseases or conditions simultaneously such as diabetes, cardiovascular, pulmonary, or renal disease)				
5	Impaired blood flow or diagnosis of atherosclerosis, arterial insufficiency, PVD, chronic edema, smoking or CAD				
6	Refuses or resistant to some aspects of care and/or treatment				
7	Cognitive impairment				
8	Exposure of skin to urinary and/or fecal incontinence, perspiration, drainage, weeping				
9	Poor or reduced meal intake				
10	Poor or reduced fluid intake				
11	Previous healed ulcer and/or open area				
12	At risk for friction or shearing from repositioning or repetitive movements by the client				
13	Admitted with potential for Deep Tissue Injury secondary to preadmission factors like prolonged bed rest, surgery; signs of skin impairment on admission; ambulance transport longer than 1 hour from point of departure to point of arrival				

14	Neuropathy and/or decreased sensation to feet and/or lower extremities				
15	Disease or drug therapy that may affect wound healing; including anticoagulant therapy, chemotherapeutic agents, immunosuppressant therapy such as steroids				
16	Medically necessary interventions that may contribute to wound development; such as cast, braces, oxygen tubing, catheter, Head of Bed elevated order				
17	Acute changes in health status				
18	Inpatient/Outpatient hospitalization in the last 90 days				
19	Emergency Room visit in the last 90 days				
20	Current open ulcer				
21	Other (chart in nurses notes)				
	OTHER CLINICAL INFORMATION				
1	Resident Weight: Enter most recent weight				
2	Resident left facility since last report date: Review in nurses notes				
2a	Hospital Admission Date:				
2b	Emergency Room Visit Date:				
2c	Returned from hospital admission during report week. Date of return:				
2d	Other:				
3	(Optional) Braden Score: Please write Braden Score at time of this report				
	Initials				

- ***Arterial Ulcer:*** *An arterial ulcer is ulceration that occurs as the result of arterial occlusive disease when non-pressure related disruption or blockage of the arterial blood flow to an area causes tissue necrosis. Inadequate blood supply to the extremity may initially present as intermittent claudication. Arterial/Ischemic ulcers may be present in individuals with moderate to severe peripheral vascular disease, generalized arteriosclerosis, inflammatory or autoimmune disorders (such as arteritis), or significant vascular disease elsewhere (e.g., stroke or heart attack). The arterial ulcer is characteristically painful, usually occurs in the distal portion of the lower extremity and may be over the ankle or bony areas of the foot (e.g., top of the foot or toe, outside edge of the foot). The wound bed is frequently dry and pale with minimal or no exudate. The affected foot may exhibit: diminished or absent pedal pulse, coolness to touch, decreased pain when hanging down (dependent) or increased pain when elevated, blanching upon elevation, delayed capillary fill time, hair loss on top of the foot and toes, toenail thickening;*

- ***Venous or Stasis Ulcer:*** *A venous ulcer (previously known as a stasis ulcer) is an open lesion of the skin and subcutaneous tissue of the lower leg, often occurring in the lower leg around the medial ankle. Venous ulcers are reported to be the most common vascular ulceration and may be difficult to heal, may occur off and on for several years, and may occur after relatively minor trauma. The ulcer may have a moist, granulating wound bed, may be superficial, and may have minimal to copious serous drainage unless the wound is infected. The resident may experience pain that may increase when the foot is in a dependent position, such as when a resident is seated with her or his feet on the floor. Recent literature implicates venous hypertension as a causative factor. Venous hypertension may be caused by one (or a combination of) factor(s) including: loss of (or compromised) valve function in the vein, partial or complete obstruction of the vein (e.g., deep vein thrombosis, obesity, malignancy), and/or failure of the calf muscle to pump the blood (e.g., paralysis, decreased activity). Venous insufficiency may result in edema and induration, dilated superficial veins, dry scaly crusts, dark pigmented skin in the lower third of the leg, or dermatitis. The pigmentation may appear as darkening skin, tan or purple areas in light skinned residents and dark purple, black or dark brown in dark skinned residents. Cellulitis may be present if the tissue is infected.*

HEMOSIDERIN

An intracellular storage form of iron; the granules consist of an ill-defined complex of ferric hydroxides, polysaccharides, and proteins having an iron content of approximately 33% by weight. It appears as a dark yellow-brown pigment.

- ***Diabetic Neuropathic Ulcer:*** *A diabetic neuropathic ulcer requires that the resident be diagnosed with diabetes mellitus and have peripheral neuropathy. The diabetic ulcer characteristically occurs on the foot, e.g., at mid-foot, at the ball of the foot over the metatarsal heads, or on the top of toes with Charcot deformity ; and*

Arterial Ulcers

Trophic skin changes (e.g., dry skin, loss of hair growth, muscle atrophy, brittle nails) may also be present. The wound may start with some kind of minor trauma, such as hitting the leg on a wheelchair. The wound does not typically occur over a bony prominence, however, can occur on the tops of the toes. Pressure forces play virtually no role in the development of the ulcer, however, for some residents, pressure may play a part. Ischemia is the major etiology of these ulcers. Lower extremity and foot pulses may be diminished or absent.

Venous Ulcers

The wound may start with some kind of minor trauma, such as hitting the leg on a wheelchair. The wound does not typically occur over a bony prominence, and pressure forces play virtually **no** role in the development of the ulcer.

DEFINITIONS

Definitions are provided to clarify clinical terms related to pressure injuries and their evaluation and treatment.

"Pressure Ulcer/Injury (PU/PI)" *refers to localized damage to the skin and/or underlying soft tissue usually over a bony prominence or related to a medical or other device. A pressure injury will present as intact skin and may be painful. A pressure ulcer will present as an open ulcer, the appearance of which will vary depending on the stage 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 skin temperature and moisture, nutrition, perfusion, co-morbidities and condition of the soft tissue.*

Friction/Shearing

- *"Friction" is the mechanical force exerted on skin that is dragged across any surface.*
- *"Shearing" occurs when layers of skin rub against each other or when the skin remains stationary and the underlying tissue moves and stretches and angulates or tears the underlying capillaries and blood vessels causing tissue damage.*

Question 1: Was the ulcer caused by pressure or pressure and shear?

- Is or was patient or the patient's body part immobile?
- Evaluate location of the ulcer. Is it directly from positioning in bed? Chair? Shoe? Device?
- Observe the patient in actual supine, side lying, sitting, and with their devices (splints, braces, etc). Is the specific area of breakdown consistent with applied external force?
- Determine if the patient had a recent period of immobility, including just prior to admission. Consider falls at home, rhabdomylisis, and surgical procedures > 4 hours.

No/unsure

- **Rationale:** Not all ulcers are from pressure. If the cause was clearly not from pressure, do NOT label as pressure.
- **Determine wound type:** Review with the patient's physician, nurse practitioner. In the case that the wound type is unclear, a wound consultation by a Certified Wound Specialist (CWS) may be helpful to determine wound type. Obtain final wound type diagnosis by the patient's physician, nurse practitioner.
- **Document:** In cases where a wound is deemed to be NOT pressure, but has characteristics of pressure, the rationale should be documented.
- **Communicate:** Provide education on wound type, plan of care, prognosis, interventions, treatments, etc. with interdisciplinary team, patient and responsible party

Yes

- **Rationale:** In the case that wound type is deemed pressure, a full evaluation should be completed to determine the extent of the issue, mitigate the pressure cause, determine plan of care and wound type prognosis and communicate effectively with the interdisciplinary team, the patient, and the family.

Dressings and Treatments

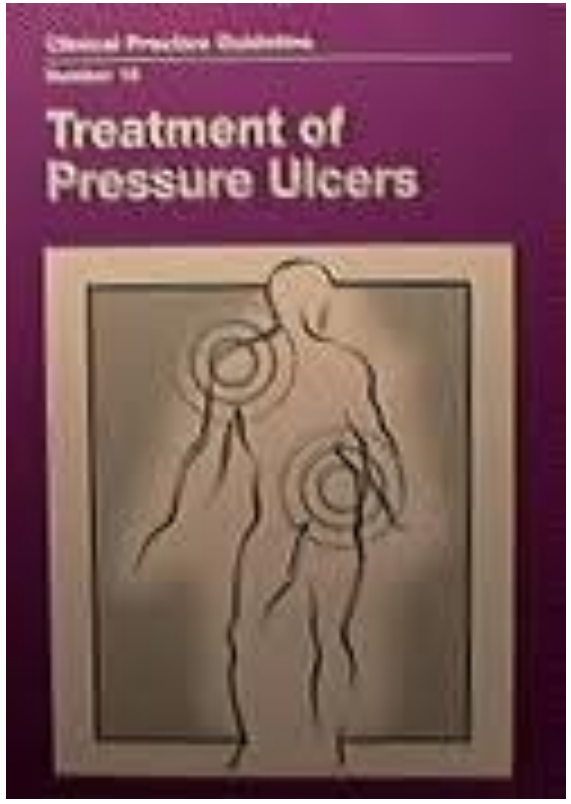
Determination of the need for treatment for a PU/PI is based upon the individual practitioner's clinical judgment, facility protocols, and current professional standards of practice.

Product selection should be based upon the relevance of the specific product to the identified PU/PI(s) characteristics, the treatment goals, and the manufacturer's recommendations for use. Current literature does not indicate significant advantages of any single specific product over another, but does confirm that not all products are appropriate for all PU/PIs. Wound characteristics should be assessed throughout the healing process to assure that the treatments and dressings being used are appropriate to the nature of the wound.

www.woundsource.com

Did you know????

- In 1992 the Agency for Health Care Policy and Research (AHCPR) Guidelines written by the Department of Health and Human Services stated Betadine, Dakin's Solution, and Peroxide should not be used because these products are cytotoxic and not beneficial for wound healing?



(Front page of AHCPR Guidelines Pamphlet)

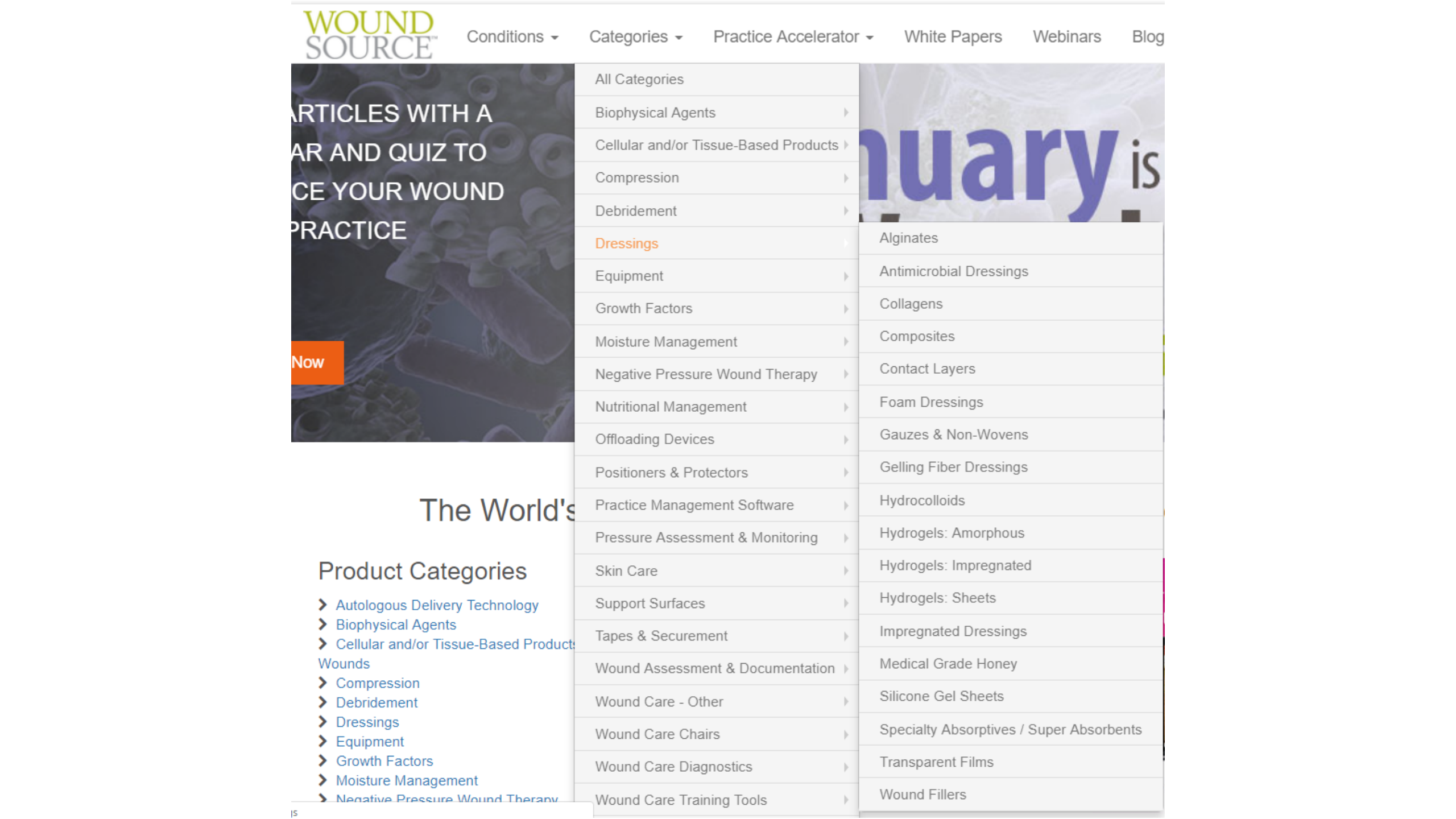
Why do we care?

What do we do about it?

Dressings

- Alginates (35)
- Antimicrobial Dressings (165)
- Collagens (23)
- Composites (26)
- Contact Layers (21)
- Foam Dressings (148)
- Gauzes & Non-Wovens (32)
- Gelling Fiber Dressings (9)
- Hydrocolloids (51)
- Hydrogels: Amorphous (32)
- Hydrogels: Impregnated (10)
- Hydrogels: Sheets (12)
- Impregnated Dressings (32)
- Medical Grade Honey (23)
- Silicone Gel Sheets (4)
- Specialty Absorptives/Super Absorbents (47)
- Transparent Films (33)
- Wound Fillers (8)

http://www.woundsource.com/product-category/dressings


WOUND SOURCE
Conditions
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White Papers
Webinars
Blog
All Categories
Biophysical Agents
Cellular and/or Tissue-Based Products
Compression
Debridement
Dressings
Equipment
Growth Factors
Moisture Management
Negative Pressure Wound Therapy
Nutritional Management
Offloading Devices
Positioners & Protectors
Practice Management Software
Pressure Assessment & Monitoring
Skin Care
Support Surfaces
Tapes & Securement
Wound Assessment & Documentation
Wound Care - Other
Wound Care Chairs
Wound Care Diagnostics
Wound Care Training Tools
Alginates
Antimicrobial Dressings
Collagens
Composites
Contact Layers
Foam Dressings
Gauzes & Non-Wovens
Gelling Fiber Dressings
Hydrocolloids
Hydrogels: Amorphous
Hydrogels: Impregnated
Hydrogels: Sheets
Impregnated Dressings
Medical Grade Honey
Silicone Gel Sheets
Specialty Absorptives / Super Absorbents
Transparent Films
Wound Fillers
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Product Categories
Autologous Delivery Technology
Biophysical Agents
Cellular and/or Tissue-Based Products
Wounds
Compression
Debridement
Dressings
Equipment
Growth Factors
Moisture Management
Negative Pressure Wound Therapy

Wounds may be classified as infected if the signs and symptoms of infection are present and/or a wound culture (obtained in accord with accepted standards, such as sterile tissue aspirate, a “quantitative surface swab” using the Levine technique or semi-quantitative swab) contains 100,000 (10^5) or greater micro-organisms per gram of tissue. A superficial swab may show the presence of bacteria, but is not a reliable method to identify infection.

Some facilities may use “wet to dry gauze dressings” or irrigation with chemical solutions to remove slough. The use of wet-to-dry dressings or irrigations may be appropriate in limited circumstances, but repeated use may damage healthy granulation tissue in healing ulcers and may lead to excessive bleeding and increased resident pain.

Wet to Dry

- Been around for centuries
- Better products
- Can complicate healing
- Pick your tag

M1200: Skin and Ulcer Treatments (cont.)

- Additional supplementation above the US RDI has not been proven to provide any further benefits for management of skin problems including pressure ulcers. Vitamin and mineral supplementation should only be employed as an intervention for managing skin problems, including pressure ulcers, when nutritional deficiencies are confirmed or suspected through a thorough nutritional assessment (AMDA PU Guideline, page 6). If it is determined that nutritional supplementation, i.e. adding additional protein, calories, or nutrients is warranted, the facility should document the nutrition or hydration factors that are influencing skin problems and/or wound healing and "tailor nutritional supplementation to the individual's intake, degree of under-nutrition, and relative impact of nutrition as a factor overall; and obtain dietary consultation as needed," (AMDA PU Therapy Companion, page 4).
- It is important to remember that additional supplementation is not automatically required for pressure ulcer management. Any interventions should be specifically tailored to the resident's needs, condition, and prognosis (AMDA PU Therapy Companion, page 11).

Based upon the assessment and the resident's clinical condition, choices and identified needs, basic or routine care could include, but is not limited to, interventions to:

- *Redistribute pressure (such as repositioning, protecting and/or offloading heels, etc.);*
- *Minimize exposure to moisture and keep skin clean, especially of fecal contamination;*
- *Provide appropriate, pressure-redistributing, support surfaces;*
- *Provide non-irritating surfaces; and*
- *Maintain or improve nutrition and hydration status, where feasible. Adverse drug reactions related to the resident's drug regimen may worsen risk factors for development of, or for non-healing PU/PIs (for example, by causing lethargy or anorexia or creating/increasing confusion) and should be identified and addressed. These interventions should be incorporated into the plan of care and revised as the condition of the resident indicates.*

DEFINITIONS

PRESSURE ULCER/
***INJURY* RISK FACTOR**

Examples of risk factors include immobility and decreased functional ability; co-morbid conditions such as end-stage renal disease, thyroid disease, or diabetes; drugs such as steroids; impaired diffuse or localized blood flow; resident refusal of care and treatment; cognitive impairment; exposure of skin to urinary and fecal incontinence; *microclimate*, malnutrition, and hydration deficits; and a healed ulcer.


InterDry
WITH SILVER
TO ORDER OR LEARN MORE
InterDry
MOISTURE-WICKING FABRIC WITH
ANTIMICROBIAL SILVER
for the management of skin-on-skin irritation
1 fights
2 wicks
3 relieves
NOW AVAILABLE WITHOUT A PRESCRIPTION


Rugby
SKIN PROTECTANT
Zinc Oxide
Ointment USP
- Provides soothing relief from poison ivy, oak and sumac
- Treats and prevents diaper rash
Net Wt 16 oz (1 lb) (454 g)
Drug Facts


ADVANCED WOUND CARE
drawtex
A Hydroconductive Wound Dressing with LevaFiber™ Technology
8 x 8
SteadMed
STERILE UNLESS OPENED OR DAMAGED


Directions:
SUPER DUPER
DIAPER
DOO
GEL

3M™ Cavilon™ Advanced Skin Protectant is an ultra-thin transparent barrier that protects vulnerable skin from caustic, corrosive body fluids without impacting visualization of the skin. Waterproof, flexible, irritant-proof.

Benefits

• Combines a unique polymer system with cyanoacrylate to create a highly durable, ultra-thin, transparent barrier with elastomeric properties
• Has been shown to significantly improve severe cases of IAD - even in the presence of continued incontinence
• Prevents skin injury and maintains skin integrity
• Reduces the pain associated with managing IAD
• Reduces overall time spent on the prevention and management of IAD and other types of skin damage
• Supports infection-control initiatives
• Lasts up to seven days
• Attaches to wet, weepy or damaged skin

Arjo's Skin IQ® Microclimate Manager (MCM) is a fluid resistant, vapor permeable, single patient use mattress cover for use with a pressure redistribution surface to help prevent and treat Stage I-IV pressure ulcers. Powered by Negative Airflow Technology (NAT), *Skin IQ MCM* continually draws away excess moisture from the skin/surface interface and helps control skin temperature.

Effective and comfortable for patients

- With an outstanding Moisture Vapor Transfer Rate (MVTR) of 130 (g/m2)/hr[(1)], *Skin IQ* is more effective in microclimate management than conventional Low Air Loss (LAL) surfaces, which have an average MVTR of 97.7 (g/m2)/hr[(2)]
- Helps reduce shear and friction[(3)]
- Helps improve patient comfort: in a study of 16 healthy participants using *Skin IQ MCM* on a pressure redistribution surface, it significantly improved the level of comfort[(2)]

Determine repositioning frequency with consideration to the individual's:

- *Level of activity and mobility,*
- *General medical condition,*
- *Overall treatment objectives,*
- *Skin condition, and*
- *Comfort.*

The resident's skin condition and general comfort should be regularly assessed. The efficacy of repositioning must be monitored and revisions to the care plan considered, if the individual is not responding as expected to the repositioning interventions.


Image Property of
WOUND
CARE PLUS

Wound # 1 Buttock Before Picture 10/11/17 **Wound #1 Buttock After Picture 11/1/17**

Case presented as a rash ongoing for the last year or more. Previous treatments included moisture barrier, antifungal, various brief trials, good pericare without significant changes. A punch biopsy was performed in October 2017. Results were negative for malignancy and positive for telangiectasia with sparse peri-vascular mononuclear cell infiltrate. Patient was subsequently started on estrogen cream and antifungal ointment simultaneously. Rash resolved within 3 weeks and patient was discharged off caseload with 100% resolution of symptoms and complaints.


Guide de mesure pour plaie
Jeter après un seul usage.
Date
Image Property of
WOUND
CARE PLUS


Wound Measurement Ruler
Patient ID
Width
Depth
Non-sterile
Single Use Only
Measurement





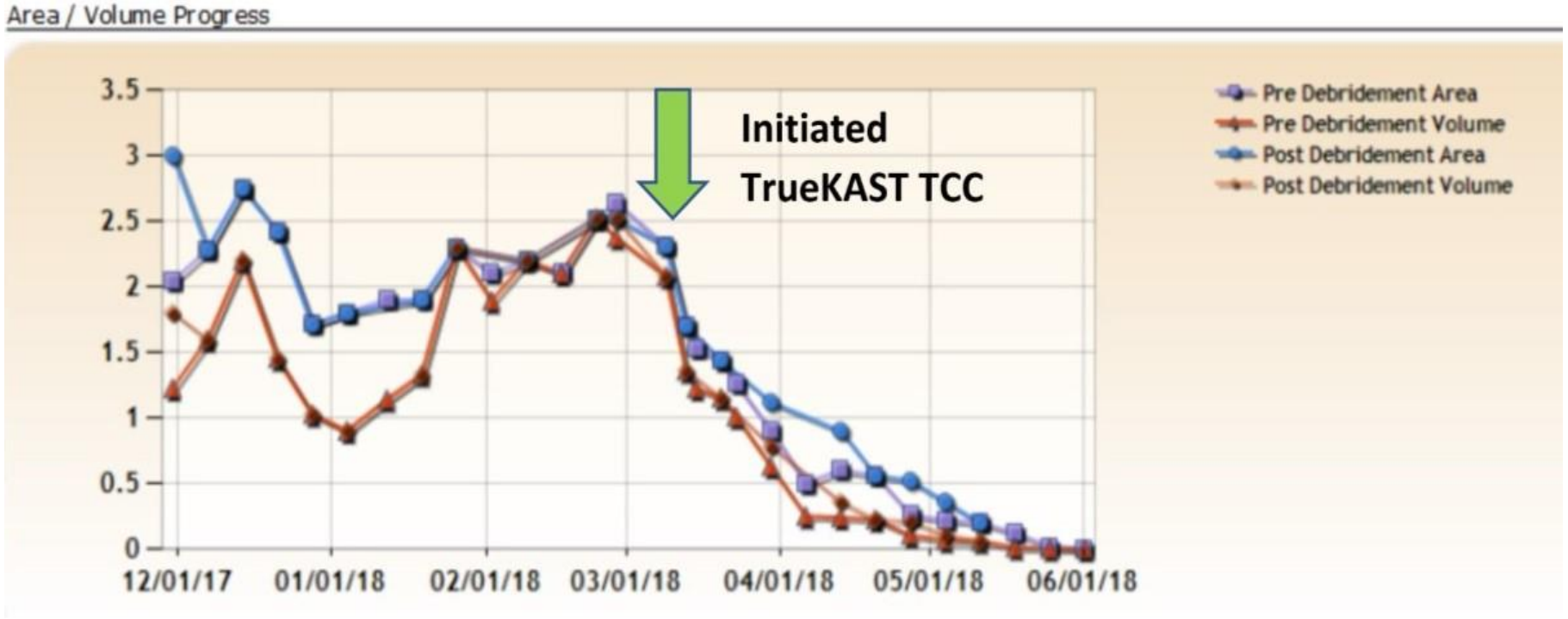
Length
Width
Depth


Depth


Rm No.
WWW.AMTWOUNDCARE.COM


Guide de mesure pour pla
Jeter après un seul usage.
Date

Case is ongoing treatment of a Diabetic wound of the right heel that has been present for 2 years. Wound Care Plus, LLC started treating the patient in November 2017. Calcium alginate was the treatment recommended on the first visit. Xray prior to application of total contact cast was negative for osteomyelitis and positive for a heel spur. ABI 0.9. Client propels self in wheelchair utilizing right heel for mobility. Patient is obese with poor nutritional intake. Physical therapy consulted for strength and mobility training. At time of application of cast, treatment was Santyl and calcium alginate covered with an ABD pad. Quality of tissue was deteriorating.




Centimeters
Patient Name
Rm No.
Date
COMPLIMENTS OF AMERICAN MEDI CHNOLOGIES — WWW.AMTWOUNDCARE.COM — 800.232.9266
Inches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Guide de mesure pour plaie
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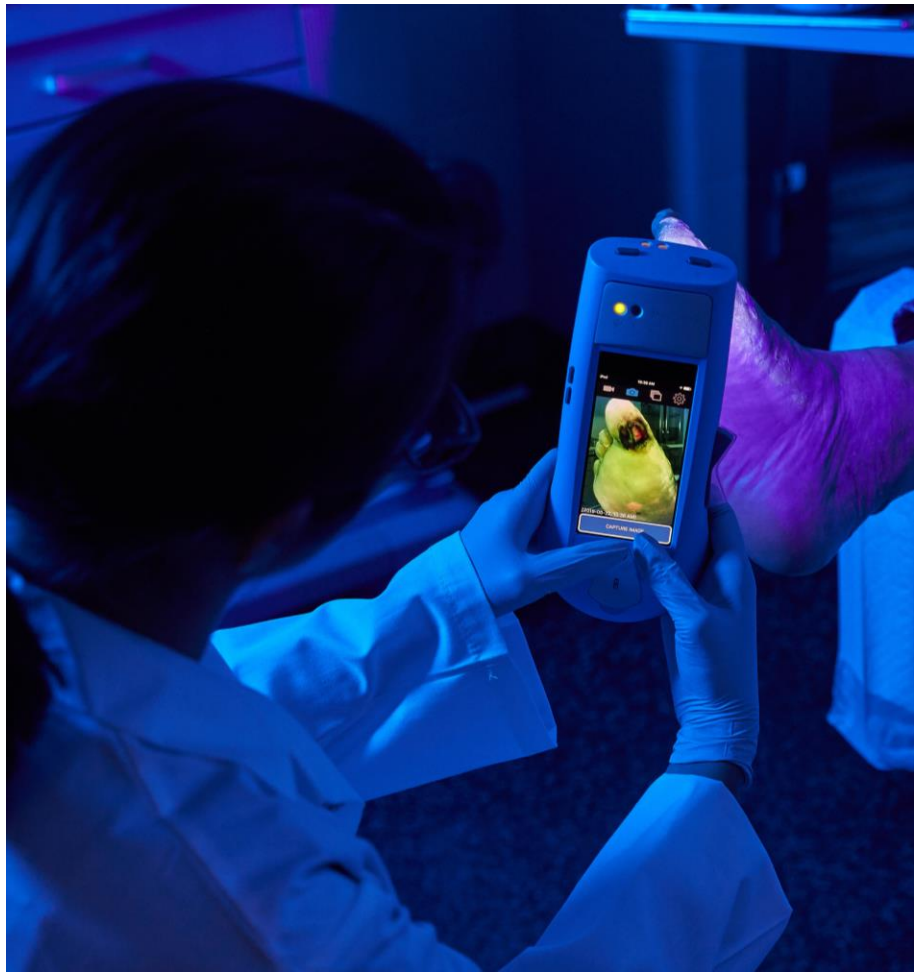
Guide de mesure pour plaie
Jeter après un seul usage.
Date


Guide de mesure pour plaie
Jeter après un seul usage.
Date

Ulceration of Abdominal Striae Distensae

1. Why is the wound there?
2. How do you know?
3. What's keeping it from healing?
4. What are you doing about it?

Enhancing Wound Assessment with MolecuLight *i:*X



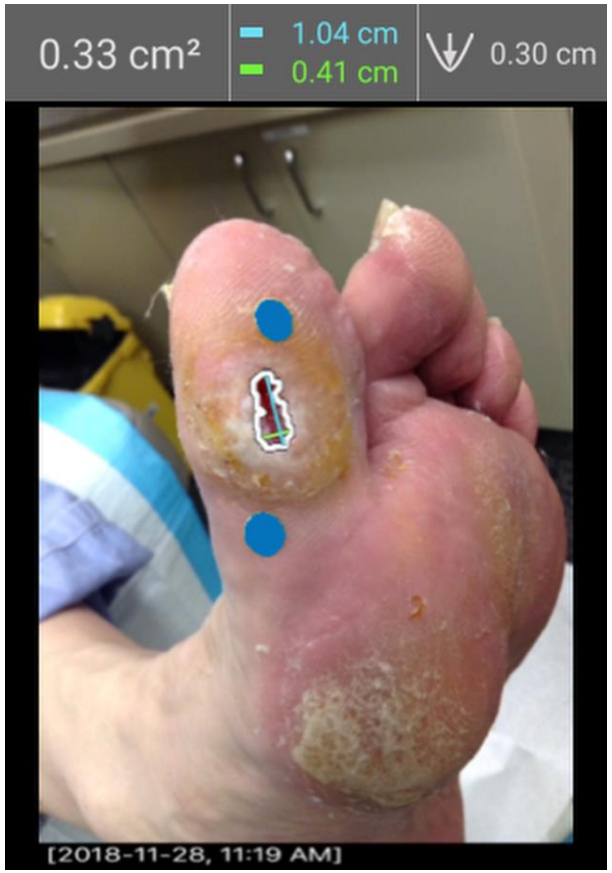
- Point-of-care fluorescence imaging device to:
  1. Detect bacteria (>10^4 CFU/g) in wounds*
  2. Digitally measure wound area
- Supports point-of-care wound assessment and documentation
- Handheld, portable, touch-screen
- No contrast agents and no patient contact required

*when used with clinical assessment

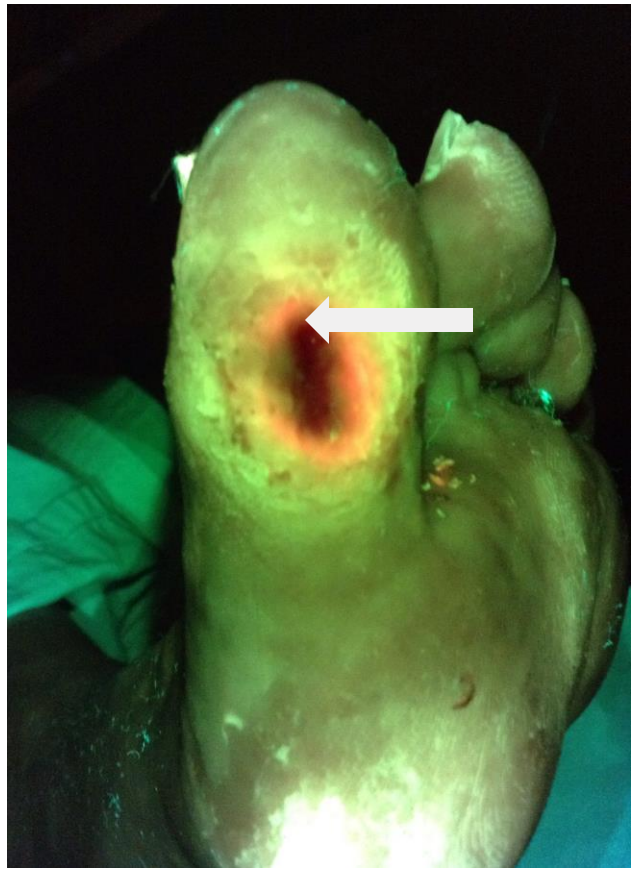
What does the MolecuLight *i:*X show?

Standard Image

Digital Wound Measurement

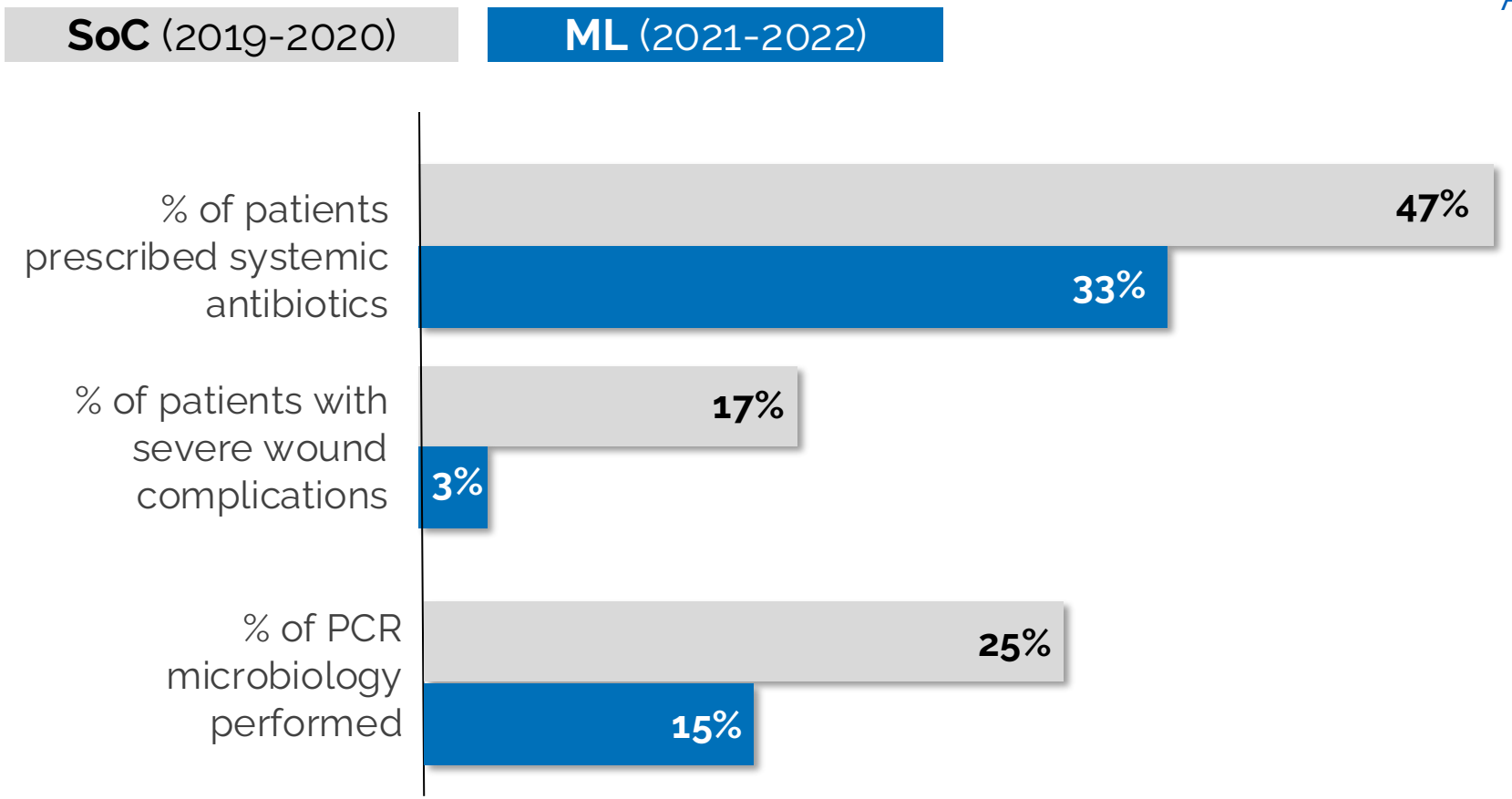


Fluorescence Image



Results

RWE of improved outcomes in Medicare beneficiaries (SNF & LTC)

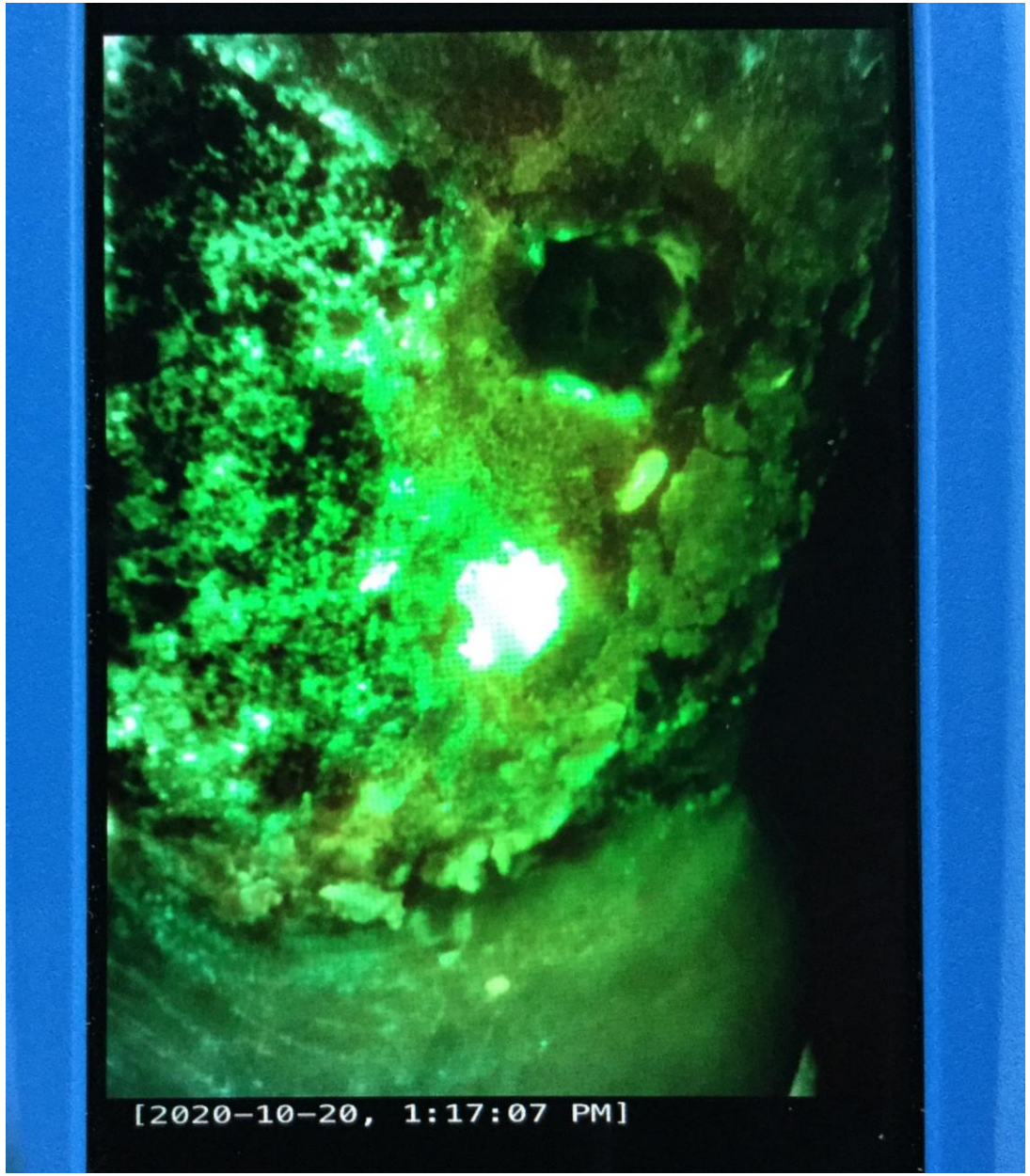


After implementing MolecuLight (ML):

- **30%** systemic antibiotic prescriptions
- **82%** severe complications (osteomyelitis, sepsis, cellulitis, gangrene)
- **40%** need for PCR Microbiology

WOUND CARE PLUS

MolecuLight®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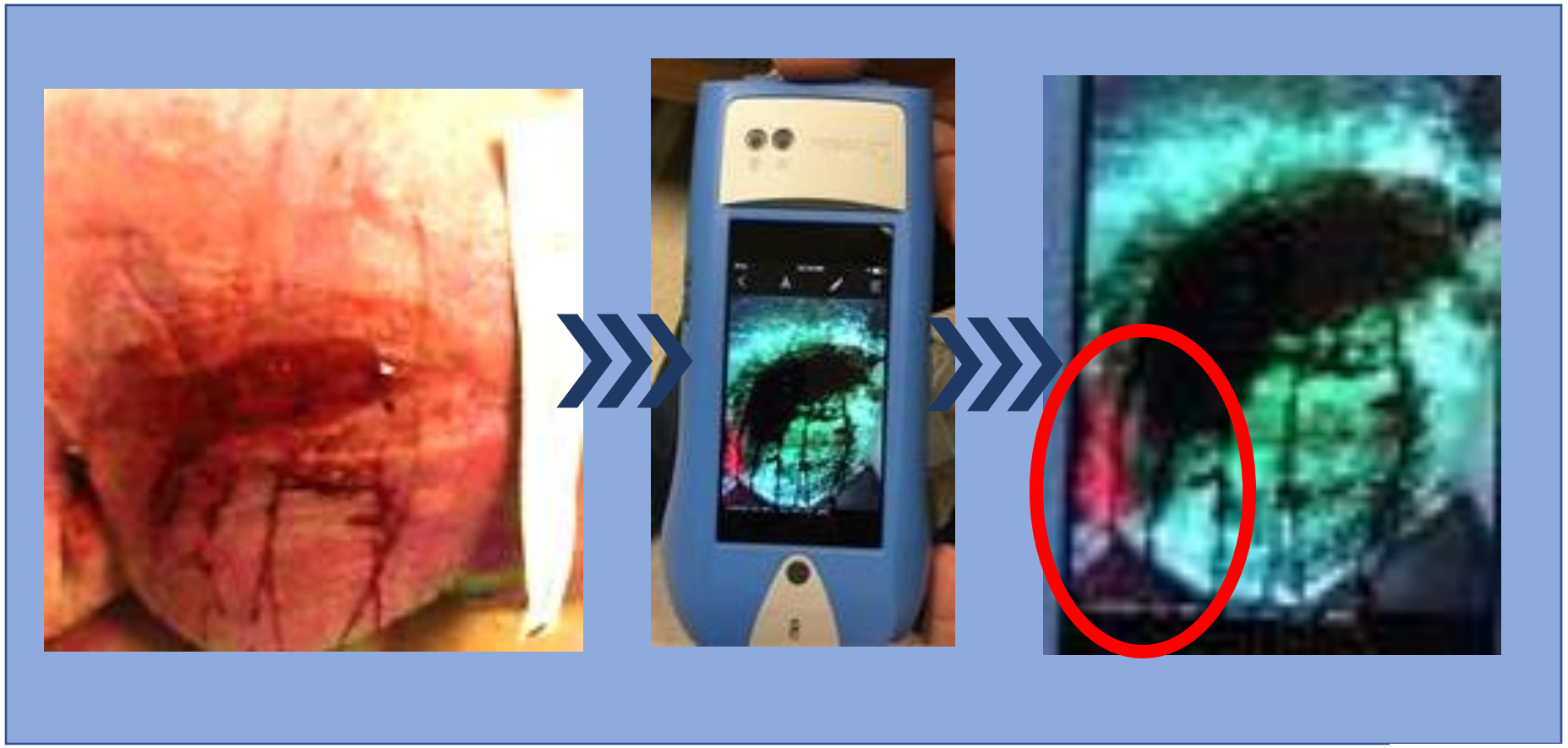
Real World Case Examples

RWE of improved outcomes in Medicare beneficiaries (SNF & LTC)

The value of reducing clinical uncertainty through the localization of bacterial loads

- Targeted treatment
- Accurate tissue sampling site location
- Confirm the need for intervention (i.e debridement or antibiotics)



WOUND CARE PLUS

MolecuLight®

Summary of Findings

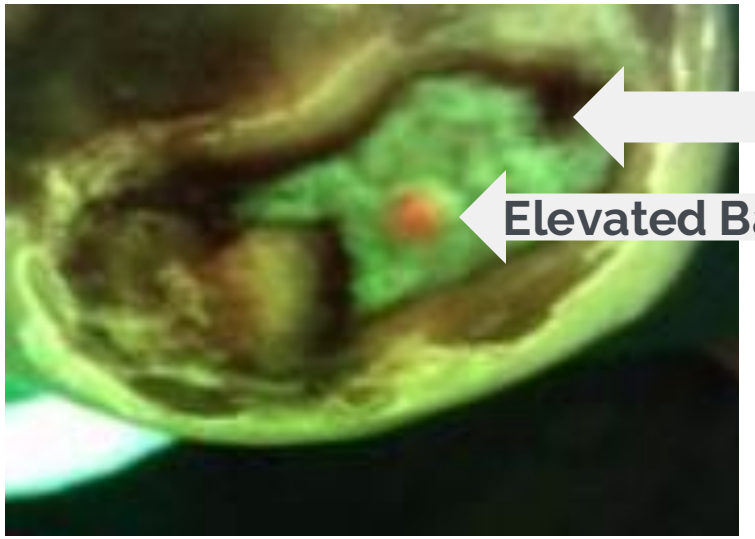
RWE of improved outcomes in Medicare beneficiaries (SNF & LTC)

Treatment	 % wounds prescribed systemic antibiotics	 % wounds healed at 12 weeks	 Time to wound healing	 % wounds with severe complications
Standard of Care (2019-2020)	47%	20%	18-weeks	17%
SoC plus MolecuLight (2021-2022)	33%	32%	12-weeks	3%
Impact	↓ **30%**	↑ **60%**	↓ **6 weeks**	↓ **82%**

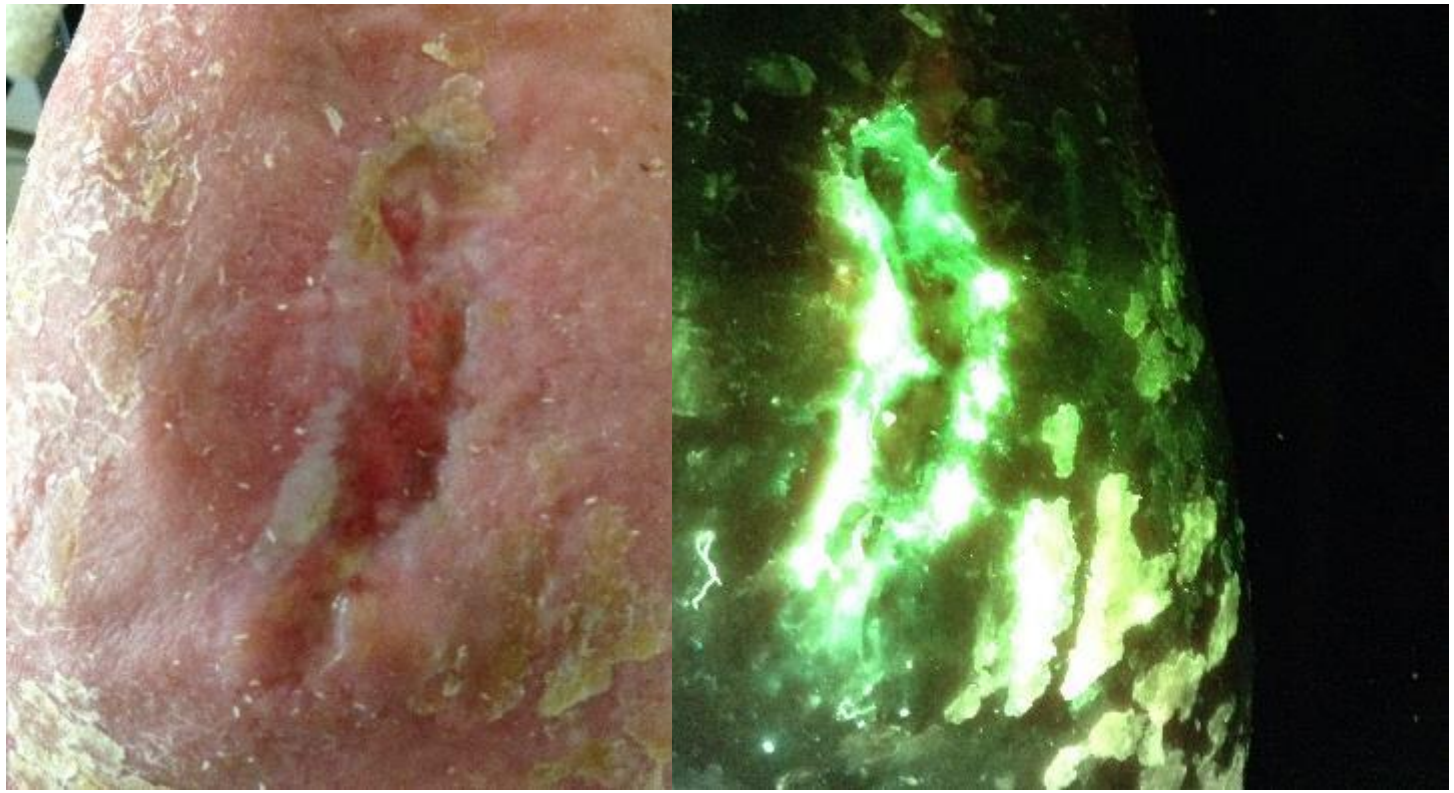
WOUND CARE + PLUS

MolecuLight®

Targeted Debridement, Targeted Cultures



Fluorescence Imaging: Reasonable and Medically Necessary



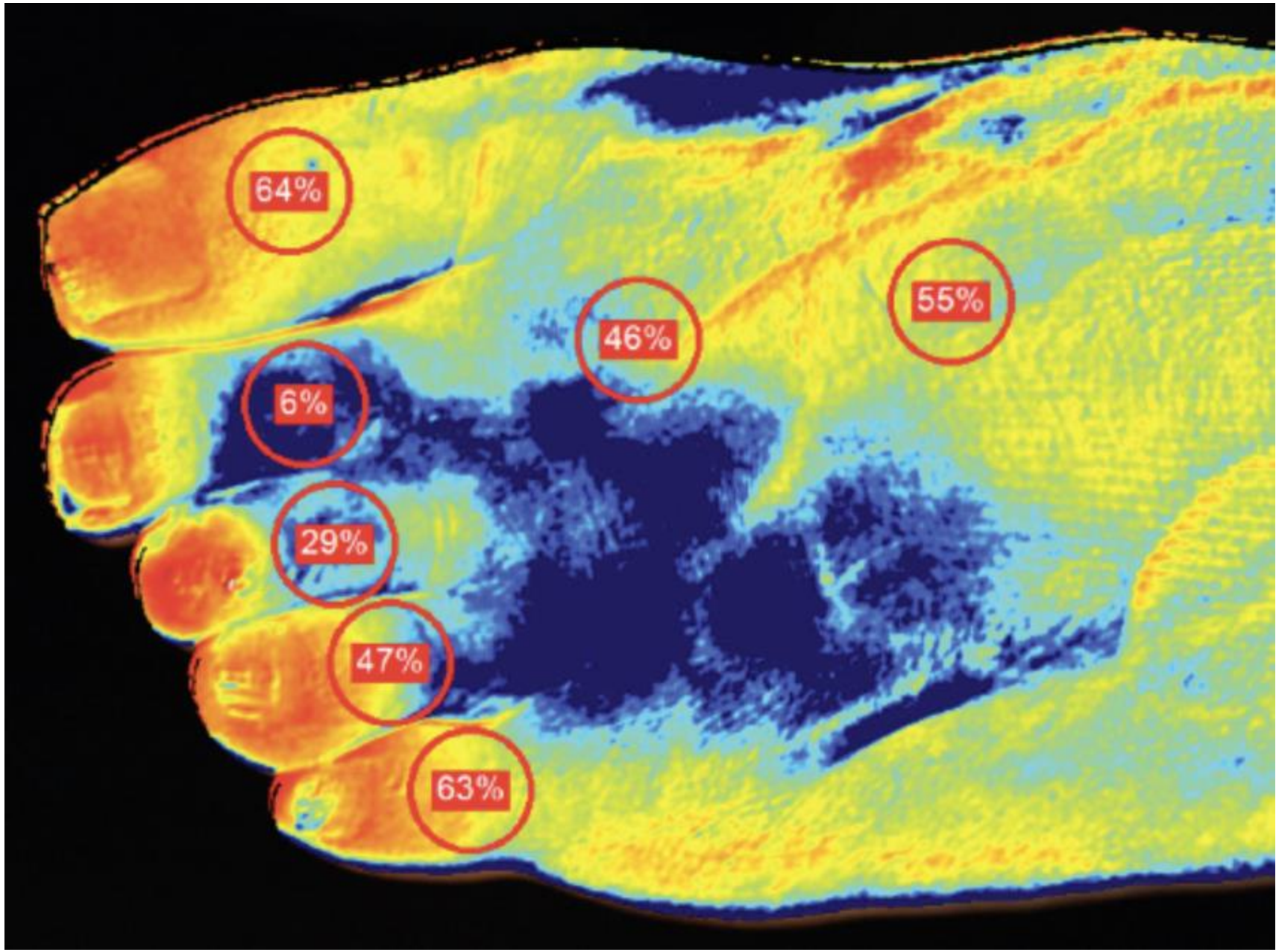
Wound biopsy indicated bacterial loads >10^6 CFU/g (after more than 3 days delay)

Peer reviewed publications on fluorescence imaging procedure from over 1,200 patients across all patient care settings consistently reports:

- 300-400% increase in detection of high bacterial burden[1,2]
- >95% accuracy[3-5]
- 2.4-fold increase in wound healing rate[6]
- Less amputation, reduced antimicrobial use[6,7]

1. Serena et al. *J Wound Care*, 2019; 2. Le et al. *Adv. Wound Care*, 2021; 3. Rennie et al. *J Wound Care* 2017; 4. Hurley et al. *J Wound Care*, 2019; 5. Raizman et al. *Diagnostics*, 2021; 6. Price N, *Diagnostics,* 2020; 7. Hill & Woo, *Wounds*, 2020

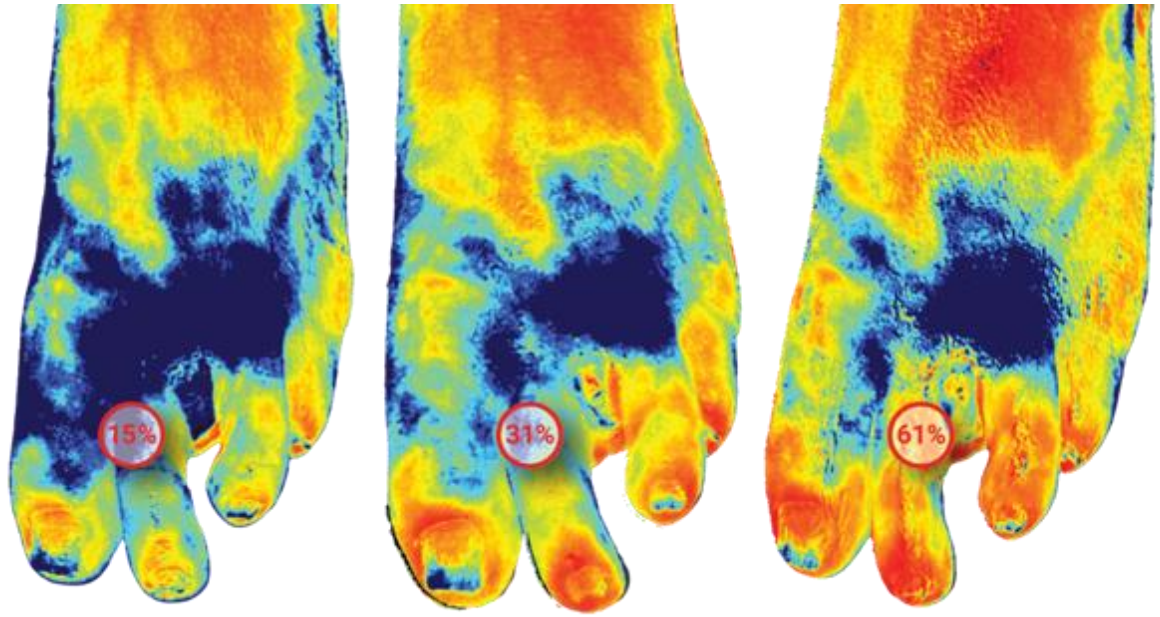

WOUND
CARE PLUS
Snapshot


64%
6%
29%
47%
63%
46%
55%

When Time is Tissue

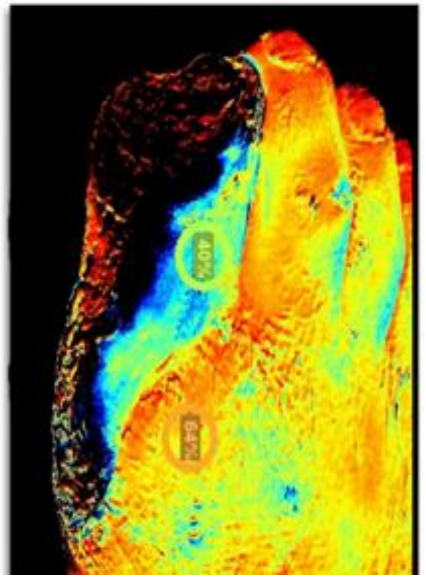
Snapshot$_{NIR}$ helps to expedite vascular referral and assess treatment effectiveness

- Triage patients earlier in the care stream
- Provides point-of-care actionable data to assess tissue response to therapy
- Understanding tissue viability in the wound and the peri-wound can enhance wound bed preparation
- Documents medical necessity and outcomes to help support third-party payment

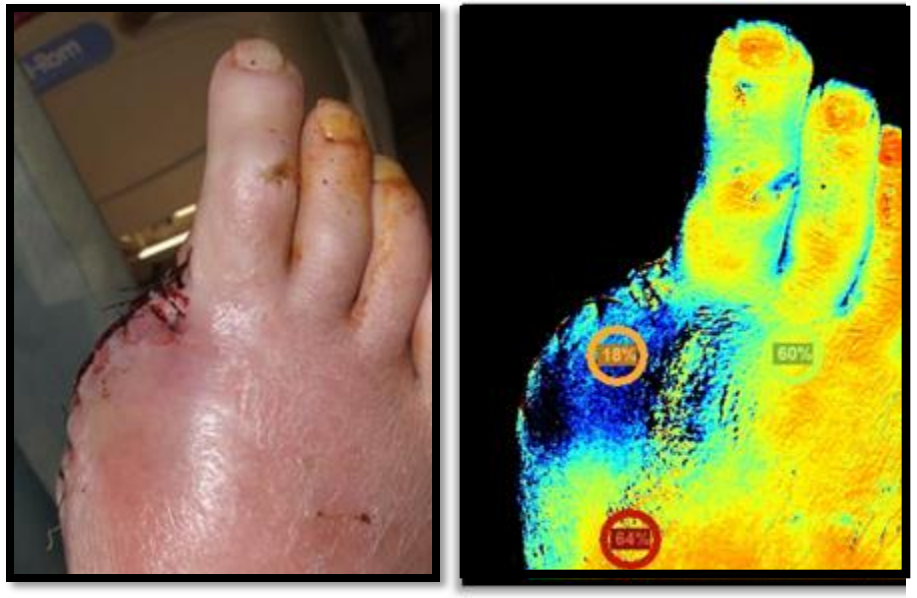


Surgical Decisions

See what lies beneath



- History of arterial disease
- Developed a gangrenous great toe



- Great toe amputation
- Kent Image shows flap at risk while clinical image appears normal

- Initial amputation demonstrated continued failure, which led to secondary amputation

How would you intervene and practice limb preservation?

Images courtesy of Dr. Landsman, DPM, PHD

got telehealth?
Wound Care Plus

In Person Rounds

We can treat all payor sources (Med A Skilled, Medicaid, Medicaid pending, Private Insurance, Hospice, etc).
We can treat all kinds of skin and wound issues (pressure, arterial, diabetic, pemphigoid, rashes, stalled skin tears, blisters, etc).

Humana

Medicare

Cigna

ESSENCE HEALTHCARE

BlueCross BlueShield

aetna

COVENTRY Health Care

Medicaid

United Healthcare


WOUND
CARE PLUS
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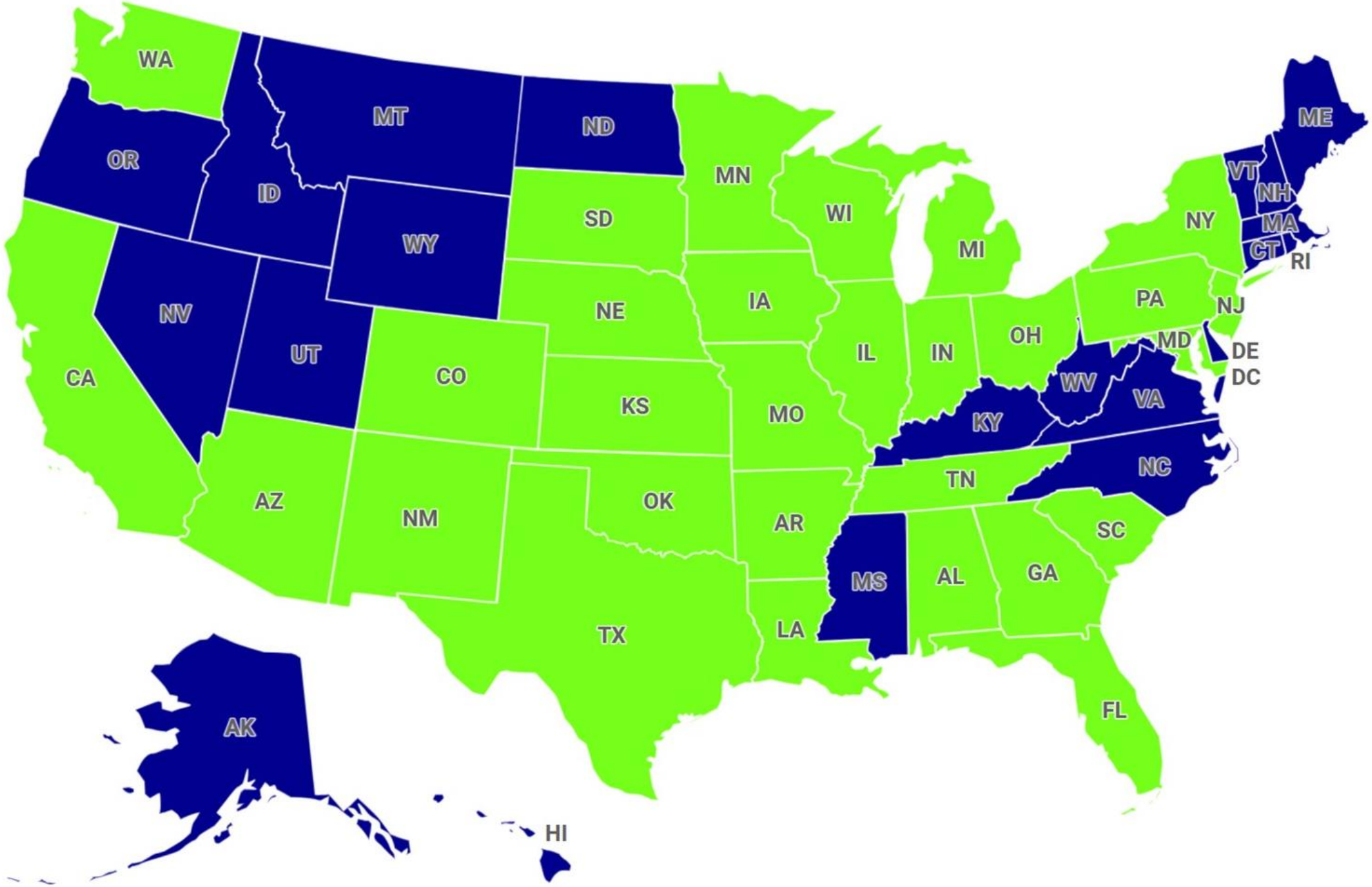
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“Do the best you can until you know better. Then when you know better, do better.”
- Maya Angelou

Questions?

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