A Proactive Approach to Wound Care

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Clinical Educator
Objectives

- Discuss physiology of aging skin
- Identify the different stages of pressure ulcers, venous, diabetic, and arterial ulcers.
- Review resources for assessments and documentation
- Determine the appropriate implementation of wound care rounds
- Engage in a discussion about treatment options.
The Skin

1. Skin is the largest human organ covering about 25 square feet.
2. Skin makes up 15% of our body weight.
3. Skin has 45 miles of nerves in skin.
4. Skin has 20 yards of blood vessels in skin.
5. Skin has 32 million bacteria per square inch of skin.
6. Humans shed and regrow outer skin cells every 27 days.
7. By the age of 70 an average person will have lost 105 lbs of skin.
Functions of the Skin

- Regulates body temperature (shivering/sweating)
- Transmits sensations (hot/cold/pain)
- Prevents excessive loss of fluid
- Protects us from the environment

Helps in the synthesis of Vitamin D
- Absorption of calcium for the maintenance of health bones
- Promotes muscle development and muscle strength
- Improves and maintains cardiovascular health, metabolic health, immune system strength and cancer prevention
- Mental health and depression avoidance
Aging Skin

Why does it become fragile?

- Sweat glands decrease in numbers
- Skin becomes thinner and less elastic
- Decrease in amount of subcutaneous tissue
- Decreased sensation
- Decreased blood supply to skin
- Skin cells are slower to reproduce
Risky Business

What factors place resident’s at a higher risk for breakdown?
+
+ Age
+ Past Medical History
+ Immobility and Incontinence
+ Poor PO intake
+ Dementia present or confused
+ Change in status
Pathophysiology

- Like layers on a cake:
Epidermis

- “Epi” means over
- “Dermis” is skin
- The outermost layer
  - Consists mainly of dead cells
  - Major waterproof barrier to the environment
  - Renews itself approximately every month
  - Produces brown pigment for protection from ultraviolet light
Dermis

- Middle layer
- Contains sweat glands, blood vessels, and nerve endings
- Tough, flexible foundation
**Subcutaneous Tissue**

- “Sub” means beneath the skin
- Bottom layer
  - Provides insulation and helps store calories
  - Mechanical shock absorber
Getting to the Root of the Matter

What is a wound?

- A bodily injury caused by physical means with disruption of normal structures.
- Acute (heal in 2 weeks-6 months)
- Chronic (6 months of more to heal)

With pressure

- Capillaries are pressed against bone
- Impedes blood flow
How We See It

- Lying Down
How We See It

On the side

Ankle  Knee  Hip area  Shoulder  Ear
How We See It

Sitting

Shoulder blade
Buttocks
Ball of foot
Heel
Tools for Proactive Assessment

- With Pressure
  - Environment, Nutrition, Activity
  - Remove the cause
  - Appendix C (Assessment and Management of Stage 1-4 Pressure Ulcers): Braden Scale
  - Lower number more at risk
Mrs. Jones is an 87 year old widow living in LTC. She recently has been admitted into LTC as she had a significant stoke, which has impacted her ability to care for herself at home.

She presents with:

- Weakness and sensory impairment on her right side including her upper and lower body
- She is incontinent and requires a change in her brief every shift by the PSW’s.
- Ambulates by being pushed in a wheelchair.
- She is able to move her left side of her body and shift in the chair; however, she is not stable to stand or transfer. She does frequently slide down in her chair and a seating assessment has been arranged.
- Family reports she has always been a good eater and eats most of her meals or supplements with Ensure.

QUESTION: What is her Braden Score?
# APPENDIX A: Braden Scale for Predicting Pressure Sore Risk

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Ability to respond meaningfully to pressure-related discomfort.</td>
<td>Unresponsive (does not moan, flinch or grasp) to painful stimuli, due to diminished level of consciousness or sedation, <strong>OR</strong> limited ability to feel pain over most of body.</td>
<td>Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness, <strong>OR</strong> has a sensory impairment that limits the ability to feel pain or discomfort over half of body.</td>
<td>Responds to verbal commands, but cannot always communicate discomfort or the need to be turned, <strong>OR</strong> has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.</td>
<td>Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort.</td>
</tr>
</tbody>
</table>

| Degree to which skin is exposed to moisture. | Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned. | Skin is often, but not always, moist. Linen must be changed at least once a shift. | Skin is occasionally moist, requiring an extra linen change approximately once a day. | Skin is usually dry, linen only requires changing at routine intervals. |

| Degree of physical activity. | Confined to bed. | Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair. | Walks occasionally during day, but for very short distances with or without assistance. Spends majority of each shift in bed or chair. | Walks outside the room at least twice a day and inside room at least every 2 hours during waking hours. |

| Ability to change and control body position. | Does not make even slight changes in body or extremity position without assistance. | Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently. | Makes frequent though slight changes in body or extremity position independently. | Makes major and frequent changes in position without assistance. |

<p>| Usual food intake pattern | Never eats a complete meal. Rarely eats more than 1/3 of any food | Rarely eats a complete meal and generally eats only about 1/2 of any food | Eats over half or most meals. Eats a total of 4 servings of protein (meat) | Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or |</p>
<table>
<thead>
<tr>
<th>Friction and Shear</th>
<th>1. Problem</th>
<th>2. Potential Problems</th>
<th>3. No Apparent Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Requires moderate to maximum assistance in moving. Complete lifting without slinging against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures or agitation lead to almost constant friction.</td>
<td>Moves feebly or requires minimum assistance. During a move skin probably slides to some extent against sheets, chair restraints, or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.</td>
<td>Moves in bed and chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair.</td>
</tr>
</tbody>
</table>

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Note: (Braden, 2001)
15 to 18 = At Risk
13 to 14 = Moderate Risk
10 to 12 = High Risk
≤ 9 = Very High Risk

Assessment Schedule:
Very High to High Risk = minimum monthly
Moderate Risk = q3months
Low/No Risk = q6months

Consider other resident factors that will also increase risks e.g., advanced age, uncontrolled pain, underlying disease conditions, low albumin and HGB.
Infalton of Air Cushions

Concept: The person should be “floating” in the cushion not sitting “on top of” the cushion.

RIGHT: The cushion forms around the shape of the buttocks

WRONG: Not enough air. The person is not “floating” in the cushion

WRONG: Anything placed between the person and the cushion decreases it’s effectiveness. The person is weight bearing on the bony prominences because they can not sink down into the cushion.

OTHER TIPS:
- The best way to check the inflation is to put your hand between the person’s bony prominence (ischial tuberosity) and the cushion and “feel” how much air is in the cushion.
- When the person gets out of the cushion it may look as though there is not enough air.
- Remember to check the cushion regularly to ensure that it has the correct amount of air.

© Norton
Surfaces - Entrapment

- **ZONE 1**: Within the rail
- **ZONE 2**: Between the top of the compressed mattress and the bottom of the rail, between rails ports
- **ZONE 3**: Between the rail and the mattress
- **ZONE 4**: Between the top of the compressed mattress and the bottom of the rail, at the end of the rails
- **ZONE 5**: Between the split bed rails
- **ZONE 6**: Between the end of the rail and the side of the head or footboard
- **ZONE 7**: Between the head or footboard and the mattress end
Staging of Pressure Ulcers

Appendix E (Risk Assessment): NPUAP Pressure Ulcer Classification System

- Deep Tissue
- Stage 1
- Stage 2
- Stage 3
- Stage 4
- Un-stageable
Deep Tissue Injury

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.
Deep Tissue
Suspected Deep Tissue Injury

Purple or maroon localized area of discoloured 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.

Refer to Wound Care Champion

Assess Blood Flow if ulcer on the lower leg to determine pathology, healability of wound:
Pulses Palpable, + Dorsalis, + Metatarsals, + Post Tibial Artery, Perform Ankle Brachial Index (ABI)

Dietary Referral & recommendations

Pressure Relief
Surface
Refer to the risk assessment score for surface guidelines assess friction and shear

Consult MD / NP / ET for treatment

Treatment

Monitor Q shift for status change

If breakdown occurs

Stage/Grade Ulcer

Follow algorithm for Stage I, II, III, IV
Venous Ulcer
Arterial Ulcer
Diabetic Ulcer
Non-Healing Ulcer

Monitor for increase in pain

Consult MD/NP for pain relief

Turning schedule every 2 hours
Category/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. Category/Stage I may be difficult to detect in individuals with dark skin tones. May indicate “at risk” persons (a heralding sign of risk).
Stage I Pressure Ulcer
Skin is intact with a reddened area that does not resolve in 20 minutes, referred to as non-blanching erythema.

Refer to Wound Care Champion

Treatment

Dietary Referral & recommendations

Keep Skin Clean and naturally moistened

Control moisture from incontinence and excessive dryness

Assess and Remove cause of pressure/friction and shear

Turning Schedule Every 2 Hours

Apply:
1) 3M™ Cavilon™ No Sting Barrier Film or
2) 3M™ Cavilon™ Durable Barrier Cream to areas exposed to moisture and dry skin

Consider transparent film
3M™ Tegaderm™
Transparent Film Dressing
Stage II

Category/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 (bruising indicates suspected deep injury). This Category/Stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation.
**Category/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 Category/Stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and Category/Stage III ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep Category/Stage III pressure ulcers. Bone/tendon is not visible or directly palpable.
Stage III Pressure Ulcer
1. Consists of full-thickness wound extending through the dermis and into subcutaneous tissue
2. May contain yellow eschar, fibrin and necrotic tissue

Refer to Wound Care Champion

Dietary Referral & recommendations

Pressure Relief
Surface Refer to the risk assessment score for surface guidelines
Assess for friction and shear

Turning schedule every 2 hours

Consult MD / NP / ET for treatment

Assess Blood Flow if ulcer on the lower leg to determine pathology, Heelability of Wound:
- Pulse Palpable + Doppler
- Metastasis + Post Tibial Artery
- Perform Ankle Brachial Index (ABI)

Monitor for increase in pain

Consult MD/NP for pain relief

Monitor for increase in pain

Follow algorithms for non-healable wounds

Non-Healable Wounds

Treatment

Irrigate wound with NS or sterile water

Apply 3M Cavilon No Sting Barrier Film to Peri-Wound

Debridement required Consider:

Sharp (non-violable tissue)
Currently limited to MD/NP/ET

Autolytic:
- Hydrogel
- Hydrogel Wound Filler with ribbon gauze
- Calcium Alginate
- 3M Tegaderm High Integrity Alginate Dressing

Fill Dead Space lightly

Exudate Management

Scant Exudate:
- Hydrogel
- Hydrogel Wound Filler
- Calcium Alginate
- 3M Tegaderm High Integrity Alginate Dressing

If ulcer is bleeding

If ulcer is bleeding

Scant Exudate:
- Calcium Alginate
- 3M Tegaderm
- Hydrocolloid Thin Dressing

Absorbent Clear
- Acrylic Dressing
- 3M Tegaderm
- Hydrocolloid

Moderate Exudate:
- Acrylic
- 3M Tegaderm
- Absorbent Clear
- Acrylic Dressing or Hydrocolloid

If infection is suspected

If infection is suspected

Local infection

Antimicrobial Dressing:
- Silver
- 3M Tegaderm Ag Mesh Dressing
- Calcium Iodine

Oral antibiotic ordered by MD / NP

Systemic infection

Large Exudate:
- Calcium Alginate
- 3M Tegaderm
- Alginate Dressing
- Foam
- 3M Tegaderm Foam Adhesive Dressing

If not infected (in inflammation stage)

Consider:
- Growth matrix
- 3M Tegaderm Matrix

Notify MD / NP if wound not improving in 2 weeks

No change in wound status
**Stage IV**

**Category/Stage IV:** Full thickness skin 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.

The depth of a Category/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. Category/Stage IV 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.
Stage IV Pressure Ulcer
1. Consists of full-thickness wound extending though to muscle, tendon, or bone
2. Extensive damage, necrotic and sloughy
3. Moderate to large amounts of exudate

Refer to Wound Care Champion
Assess Blood Flow if ulcer on the lower leg to determine pathology.

Healability of Wound:
- Fissures: Polyethylene
- Dorsalis: Metatarsal(4th and 5th), Plantar Arch, Perform ankle brachial index (ABI)

Consult MD/ NP/ ET for treatment

Monitor for increase in pain

Consult MD/ NP for pain relief

Non-healable Wounds
Follow algorithm for non-healable wounds

Treatment
Irrigate wound with NS or sterile water
Apply 3M™ Carion™ No Sting Barrier Film to Periwound

If Debridement is required, consider:
- Sharp (non-visible tissue)
- Currently limited to MD/ NP/ ET

If Exudate is Scant:
- Hydrogel: 3M™ Tegaderm™ Wound Dressing with ribbon
- Calcium Alginate: 3M™ Tegaderm™ Alginite

If Exudate is Moderate:
- Hydrogel: 3M™ Tegaderm™ Wound Dressing with ribbon
- Calcium Alginate: 3M™ Tegaderm™ High Integrity Alginite

If Exudate is Large:
- Calcium Alginate: 3M™ Tegaderm™ High Integrity Alginite
- Foam Adhesive Dressing

If Infection is Suspected
- Local Infection: Antimicrobial Dressing
  - 3M™ Tegaderm™ Ag Mesh Dressing with Silver
  - Cadexomer Iodine
  - Activated Charcoal with Silver
- Systemic Infection: Oral antibiotic ordered by MD/ NP
  - Notify MD/ NP if wound not improving in 2 weeks

If Not Infected (in inflammation stage)
- Consider: 3M™ Tegaderm™ Matrix
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 Category/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-Healable Wounds

Refer to Wound Care Champion

Consult MD / NP / ET for treatment

Treatment

Dry

Paint with Betadine and cover with gauze three times per week

Suspected Infection

Local Antimicrobial:
- 3M™ Tegaderm™
- Ag Mesh
- Cadexomer Iodine
- Appropriate fluid management dressing:
  - 3M Tegaderm Alginate
  - 3M Tegaderm Foam
  - 3M Tegaderm Foam Adhesive

Systemic
- Oral/IV antibiotics as ordered by MD/NP
  - If no improvement in two weeks notify MD/NP

Palliative Wound

Manage Odour
- Charcoal dressing
- Metrojel
- Metronidazole irrigation

Manage Exudate
- Contact layer
- 3M™ Tegaderm™ Alginate
- 3M™ Tegaderm™ Foam

Pain
- Assess pain with each dressing change and medicate appropriately.
- Consult MD/NP
While giving Mrs. Jones her morning bath, a PSW reports an open area on her sacrum. Upon inspection, it is a reddened area that measures 3 x 4.5 cm in an oval shape, and has a moderate amount of purulent drainage. The edges of the wound are well approximated and the area has penetrated into the subcutaneous tissue. The wound bed appears yellow and sloughy, and Mrs. Jones states her pain is a 8/10 in that area. It does not undermine or tunnel and the peri-wound area is intact.

What stage is this ulcer?
Venous Ulcer

- Caused by incompetent valves, varicose veins, CHF.
- Goal of treatment is relieve pain, a speedy recovery, and heal.
- Shallow, superficial, irregular shape and painful.
Arterial Ulcer

- Caused by poor perfusion to the lower extremities.
- Goal of treatment is to keep dry and improve circulation.
- Punched out appearance, well defined margins.
Diabetic Ulcer

- Caused by neuropathic (nerve) and vascular (blood vessel) complications of the disease.

- Prevention is key. Goal of treatment is to keep dry.

- Appear like arterial ulcers but usually over bony areas, pressure areas and joints.
Laceration

- A tear or opening in the skin caused by injury

**Treatment**

- **Stitches**
  - Holds edges together, stop bleeding, reduces scaring, decrease chance of infection.
  - Involves face, longer than 2 cm, bleeding heavily, does not approximate well.

- **Steri-Strips**
  - Sterile adhesive strips that can be used on small shallow wounds
  - Little to no bleeding and easily approximated/

- **Dermabond**
  - Waterproof seal, decreases chance of infection for full of partial thickness lacerations
  - Easily approximated
Other Assessments: Pain

+ O: Onset
+ P: Palliating or Provoking
+ Q: Quality
+ R: Radiation
+ S: Severity
+ T: Timing
+ U: How does it affect you?
+ V: Value
Wound Rounds

+ Wound Rounds
  + Assessment
  + Progress
  + Goals of treatment
  + Education
  + Choosing of therapy and why
  + Care plan
  + Follow up
Common Terms

- **Slough**
  - Soft, moist tissue that adheres to the wound bed. (white, yellow, tan, green)

- **Granulation and Epithelium**
  - Pink, red healing tissue with collagen

- **Erythema**
  - Redness that may be normal with inflammatory phase or could be sign of infection

- **Maceration**
  - Caused by excessive moisture. White and soft.

- **Induration**
  - Abnormal hardening of tissue with infection

- **Undermining and Tunneling**
  - Tissue destruction under intact skin and pathways in the wound.
<table>
<thead>
<tr>
<th>Measurement Parameter</th>
<th>Clinical Observation</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure</td>
<td>Length, width, depth, area</td>
<td>Reduction or increase in wound surface area and/or depth</td>
</tr>
</tbody>
</table>
| Exudate               | Amount, quality       | - Decreased or increased amount  
                         | - Decreased or increased purulence |
| Appearance            | Wound bed appearance, tissue type and amount | - Increased or decreased percentage of granulation tissue  
                         | - Increased or decreased percentage of necrotic tissue  
                         | - Friability of granulation tissue |
| Suffering             | Patient pain level using validated pain scale | Improved or worsening wound-related pain |
| Undermining           | Presence or absence   | Decreased or increased amount |
| Re-evaluate           | Monitor all parameters on regular basis – every one to four weeks | Parameters sequentially documented in patient record |
| Edge                  | Condition of wound edge and surrounding skin | - Presence or absence of attached edge with advancing border of epithelium  
                         | - Presence or absence of erythema and/or induration  
                         | - Presence or absence of maceration |
# CAWC Product Picker

<table>
<thead>
<tr>
<th>Product Categories</th>
<th>Product Descriptions</th>
<th>Usage Considerations</th>
</tr>
</thead>
</table>
| **Antimicrobial**  | • Sheets, gels or paste  
• Silver compounds or cadexomer iodine | • Broad spectrum topical antimicrobial to reduce localized bacteria  
• They do not replace systemic antibiotics for deeper tissue infections  
• Not to be used if known hypersensitivities to any product components |
| **Biologic**       | • May be gels, wafers or in sheets | • Skill required for patient selection and application of this therapy  
• Should not be used on wounds with infection/sinus tract, excessive exudate, or on those known to have sensitivity to any of the products components  
• Cultural or ethical issues may affect usage |
| **Calcium alginate** | • Sheets or fibrous ropes of calcium sodium alginate (seaweed derivative)  
• Has hemostatic capabilities | • Used on exuding wounds  
• Biodegradable  
• Requires a secondary dressing  
• Should not be used on dry wounds  
• Low tensile strength – avoid packing into narrow deep sinuses |
| **Charcoal**       | • Contains odour absorbent charcoal within product  
• Some include a layer of silver | • These products mask the odour but do not treat the cause.  
• Ensure that dressing edges are sealed to control odour.  
• Some charcoal products are inactivated by moisture and should not be used as a contact layer |
| **Clear Acrylic**  | • Transparent film contact layer and clear, acrylic polymer pad, topped with breathable, waterproof film | • Enables clinicians to monitor small to moderately exuding wounds without changing the dressing  
• Supports autolytic debridement  
• Extended wear time  
• Do not cut acrylic pad |
| **Composite dressing** | • Multilayered, combination dressings to increase absorbency.  
• Some are appropriate for autolysis. | • Use with wounds that have moderate to large amounts of exudate  
• Protect periwound skin from maceration |
| **Films/membranes** | • Semi-permeable, polyurethane adhesive sheet  
• Moisture vapour transmission rate (MVTR) varies from film to film  
• Impermeable to liquid and bacterial infiltration | • Can help reduce friction to susceptible skin (e.g., heels)  
• Use for donor sites or partial thickness wound  
• Can be combined with hydrofibres or alginites to create island dressings  
• Should not be used on draining or infected wounds |
| **Foams**          | • Non-adherent or adherent polyurethane  
• May have occlusive properties dependent on the outer layer  
• Some have other properties such as low tack, antimicrobial or pain control | • Used on moderate or heavily exuding wounds  
• Foams with silver may be indicated for use on infected wounds  
• Occlusive foams without silver should not be used on infected wounds |
| **Hydrocolloid**   | • May contain gelatin, sodium carboxymethylcellulose and pectin  
• Sheet dressings are occlusive with polyurethane outer layer, forming a barrier against infection.  
• Varied thickness and shapes  
• Characteristic odour may accompany dressing change and should not be confused with infection | • Moisture-retentive dressing, contributes to autolytic debridement.  
• Observe periwound skin for maceration  
• Creates occlusive barrier against bacterial invasion  
• Caution when used on fragile skin  
• Should not be used on heavily draining or infected wounds |
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogel</td>
<td>• Polymers with high water content</td>
<td>• Adds moisture, absorbs a small amount of exudate and prevents drying of the wound bed.</td>
</tr>
<tr>
<td></td>
<td>• Available in gels, solid sheets or embedded into gauze.</td>
<td>• Peri-wound skin may need protection from maceration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• May require a secondary dressing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Solid sheets should not be used on infected wounds</td>
</tr>
<tr>
<td>Hydrophilic fibre</td>
<td>• Sheet or packing strip of sodium carboxymethylcellulose</td>
<td>• Best for moderate amounts of exudate</td>
</tr>
<tr>
<td></td>
<td>• Converts to a solid gel when activated by moisture</td>
<td>• Low tensile strength – avoid packing into narrow deep sinuses where breakage could happen</td>
</tr>
<tr>
<td></td>
<td>• Supports autolytic debridement</td>
<td>• Should not be used on dry wounds</td>
</tr>
<tr>
<td>Hypertonic</td>
<td>• Gauze ribbon or gauze wafer or gel impregnated with salt concentrate</td>
<td>• Can be used on wounds that have moderate to large drainage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• May require a secondary dressing</td>
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<tr>
<td></td>
<td></td>
<td>• Used for wounds with necrotic tissue.</td>
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<td></td>
<td></td>
<td>• May be painful on sensitive tissue.</td>
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<tr>
<td></td>
<td></td>
<td>• Gauze dressings should not be used on dry wounds</td>
</tr>
<tr>
<td>Negative pressure wound therapy (NPWT)</td>
<td>• Consists of wound dressing (foam or gauze), vacuum pump, canister and tubing</td>
<td>• Skilled required for patient selection for this therapy: do not use if: non-enteric and unexplored fistulas, necrotic tissue with eschar present, osteomyelitis (untreated), malignancy in the wound.</td>
</tr>
<tr>
<td></td>
<td>• Applies localized negative pressure to the surface and margins of the wound and assists in removing fluids from the wound.</td>
<td>• Do not place device over exposed blood vessels or organs.</td>
</tr>
<tr>
<td>Non-adherent synthetic</td>
<td>• Porous sheets of dressings with low adherence to tissue</td>
<td>• Facilitates application of topical preparations</td>
</tr>
<tr>
<td></td>
<td>• Serve as a contact layer that allows the transfer of exudate to secondary dressing</td>
<td>• Use with wounds that are painful or friable</td>
</tr>
<tr>
<td></td>
<td>• May be composed of silicone, medicated or non-medicated tulle</td>
<td>• May require a secondary dressing</td>
</tr>
<tr>
<td>Pain-control dressing</td>
<td>• Foam dressings with a continuous release of ibuprofen</td>
<td>• Indicated for the treatment of painful exudating wounds</td>
</tr>
<tr>
<td></td>
<td>• Foam dressing with low tack for easier removal</td>
<td>• Not to be used with known hypersensitivities to any of the product components</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Do not exceed recommended dose</td>
</tr>
</tbody>
</table>
Common Products

- **Transparent films**
  - Waterproof but does not adhere well to moist areas

- **Hydrocolloids**
  - Waterproof, promotes autolytic debridement, moderate absorbent

- **Hydrogels**
  - Autolytic debridement, keeps environment moist, may cause maceration

- **Foams**
  - Absorbent, can be a source of infection if not changed in a timely manner

- **Calcium Alginates**
  - Derived from seaweed, hemostatic properties, debrides, odour control, not to be used in a dry wound

- **Antimicrobials**
  - Silver or honey for infected, irritated wounds
Scenario 1

- Un-stageable pressure ulcer coccyx. Wound measures 1 x 0.8 x 0.1 cm. Wound bed covered with slough, edges smooth and peri-skin intact and red. Significant odour from the wound after cleansing. Resident is on a low air loss surface.

- Plan:
  - Shower or irrigate with N/S
  - Protect peri-skin with barrier wipe
  - Silvasorb to wound bed
  - Cover with hydrocolloid
  - Change twice weekly.
Scenario 2

- Pressure ulcer on heel measures 1.5x1.0x0.5cm with moderate amount of sanguineous drainage. Peri-wound intact.

- Plan:
  - Irrigate with normal saline
  - Protect peri-skin with barrier wipe
  - Seasorb to wound bed
  - Cover with Mepilex Foam
  - Change every 3 days and PRN.
  - Consider heel poseys
Treatment

If its wet.................. DRY it!
If its dry.................. MOISTEN it!
If its irritated .......... SOOTHE it!
If its chronic .............. IRRITATE it!
If its palliative .......... COMFORT it!
Stages of Wound Healing

- **Stage 1: Inflammatory**
  - 0-3 days
  - Bleeding stops and inflammation present

- **Stage 2: Phagocytosis**
  - 3-21 days
  - WBC’s engulf bacteria and foreign debris

- **Stage 3: Angiogenesis**
  - New blood vessels develop, collagen synthesis, epithelialization and contraction

- **Stage 4: Maturation**
  - 21 days to 2 years
  - Tensile strength improves up to 80%
Infected or Not Infected?

- Wound Cleaning
- Normal Saline or Sterile Water
- Irrigate with 20-30 ml syringe with 18g angiocath
- 4-6 inches above the wound
- 5-15 PSI
Table 4.
Clinical signs and symptoms of wound infection

<table>
<thead>
<tr>
<th>Superficial increased bacterial burden (critically colonized)</th>
<th>Deep wound infection</th>
<th>Systemic infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonhealing</td>
<td>Size is bigger</td>
<td>Fever</td>
</tr>
<tr>
<td>Exudate wound</td>
<td>Temperature increased</td>
<td>Rigours</td>
</tr>
<tr>
<td>Red and bleeding wound</td>
<td>Os (probes to or exposed bone)</td>
<td>Chills</td>
</tr>
<tr>
<td>Debris in the wound</td>
<td>New areas of breakdown</td>
<td>Hypotension</td>
</tr>
<tr>
<td>Smell from the wound</td>
<td>Exudate, erythema, edema</td>
<td>Multiple organ failure</td>
</tr>
</tbody>
</table>
Last Points to Ponder

+ Look at the whole resident not the “hole” in the resident.
+ Always ensure the goals of treatment are clear and understood.
+ If at first you don’t succeed, try, try again!
+ Involve your team. It’s not a one-stop shop.
References


