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Cardinal Health SkinHealth360™

Wound Care



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Wound care algorithm

Necrotic tissue

Exudate: dry	
Therapeutic goal	• Remove devitalized tissue • Do not attempt debridement if vascular insufficiency suspected • Keep dry and refer for vascular assessment
Role of dressing	• Hydrate wound bed • Promote autolytic debridement
Wound bed preparation	Perform surgical or mechanical debridement • Clean the wound • Licensed provider to perform debridement as indicated
Primary dressing	Hydrogel or honey
Secondary dressing	Polyurethane film dressing



Epithelializing, red or pink tissue

Exudate: none to low	
Therapeutic goal	Promote epithelialization and wound maturation (contraction)
Role of dressing	Protect new tissue growth
Wound bed preparation	Clean the wound
Primary dressing	• Hydrocolloid (thin) • Polyurethane film dressing • Low adherent (silicone) dressing
Secondary dressing	• Use pad and/or retention bandage • Avoid bandages that may cause occlusion and maceration • Use tapes with caution due to allergy potential and secondary complications



Wound care algorithm (continued)

Granulating, clean or red tissue

Exudate: dry to low



Therapeutic goal	• Promote granulation • Provide healthy wound bed for epithelialization
Role of dressing	• Maintain moisture balance • Protect new tissue growth
Wound bed preparation	Clean the wound
Primary dressing	• Hydrogel • Low adherent (silicone) dressing • For deep wounds, use cavity strips, rope or ribbon versions
Secondary dressing	• Use pad and/or retention bandage • Avoid bandages that may cause occlusion and maceration • Use tapes with caution due to allergy potential and secondary complications

Exudate: moderate to high



Therapeutic goal	• Manage exudate • Provide healthy wound bed for epithelialization
Role of dressing	• Maintain moisture balance • Protect new tissue growth
Wound bed preparation	• Clean the wound • Consider barrier products
Primary dressing	• Absorbent dressing (alginate/CMC/foam) • Low adherent (silicone) dressing • For deep wounds, use cavity strips, rope or ribbon versions
Secondary dressing	• Use pad and/or retention bandage • Avoid bandages that may cause occlusion and maceration • Use tapes with caution due to allergy potential and secondary complications

Wound care algorithm (continued)

Sloughy, yellow, brown, black or gray tissue

Exudate: dry to low



Therapeutic goal	• Remove slough • Provide clean wound bed for granulation tissue
Role of dressing	• Hydrate wound bed • Control moisture balance • Promote autolytic debridement
Wound bed preparation	• Surgical or mechanical debridement, if appropriate • Clean the wound (consider antiseptic solution)
Primary dressing	Hydrogel or honey
Secondary dressing	• Polyurethane film dressing • Low adherent (silicone) dressing

Exudate: moderate to high



Therapeutic goal	• Remove slough • Provide clean wound bed for granulation tissue • Manage exudate
Role of dressing	• Absorb excess fluid • Protect periwound skin to prevent maceration • Promote autolytic debridement
Wound bed preparation	• Surgical or mechanical debridement, if appropriate • Clean the wound (consider antiseptic solution) • Consider barrier products
Primary dressing	• Absorbent dressing (alginate/CMC/foam) • For deep wounds, use cavity strips, rope or ribbon versions
Secondary dressing	Retention bandage or polyurethane film dressing

Wound care algorithm (continued)

Infected tissue

Exudate: low to high

Therapeutic goal	• Reduce bacterial load • Manage exudate • Control odor
Role of dressing	• Antimicrobial action • Moist wound healing • Odor absorption
Wound bed preparation	• Clean the wound (consider antiseptic solution) • Consider barrier products
Primary dressing	Antimicrobial
Secondary dressing	• Use pad and/or retention bandage • Avoid bandages that may cause occlusion and maceration • Use tapes with caution due to allergy potential and secondary complications



Wound care dressings[1]

Alginate

Primary dressing derived from brown seaweed in rope or pad form.

Function	Absorption; packing
Benefits	• Encourages autolytic debridement • Highly absorbent • Can be used on infected and uninfected wounds • Nonadherent
Limitations	• Requires a secondary dressing • Use with extreme caution with exposed tendon, capsule or bone to prevent desiccation
Common uses	• Highly exudating wounds • Venous insufficiency ulcers • Tunneling wounds • Swabs used to profile, fill and measure wound depth
Change time	• A heavily exudating wound may require dressing changes once or twice a day • As the wound heals and exudation is reduced, dressing changes can be made less frequently (every two to four days) or as directed by a healthcare professional



Antimicrobial — polyhexamethylene biguanide (PHMB)

Broad-spectrum antimicrobial agent used in a variety of products including, contact lens cleaning solutions, skin disinfectant solutions and wound dressings

Function	Reduce microbial growth
Benefits	• Low cytotoxicity • Effective against gram positive and gram negative bacteria, yeast and fungi (including MRSA and VRE) • Has no known resistance • Is active wet or dry
Limitations	
Common uses	• Contaminated and infected wounds • Chronic wounds
Change time	PHMB remains effective up to 72 hours (dressings) and seven days (foams)



Wound care dressings[1] (continued)

Collagen

Derived from bovine, porcine or avian sources; available in nonadherent pouches or vials, gels loaded into syringes, pads, powders and freeze-dried sheets

Function	Stimulate wound healing by diverting matrix metalloproteinases (MMPs) to consume the collagen placed into the wound
Benefits	• May accelerate wound repair • Slight absorption • No adherence to the wound • May be used with topical agents
Limitations	• Requires a secondary dressing • Not indicated for third-degree burns or residents with sensitivities to bovine materials
Common uses	• Partial- and full-thickness wounds • Minimal to moderate exudate • Contaminated and infected wounds
Change time	• Should be changed when signs of saturation are visible along the edges or whenever good nursing practice dictates • Up to seven days or as directed by a healthcare professional

Foam

Comformable dressing consisting of a semipermeable hydrophilic foam and an impermeable outer barrier

Function	For minimal to heavily exudating wounds
Benefits	• Moisture-retentive • Encourages autolytic debridement • Provides thermal insulation • May provide cushioning • Adherent and nonadherent forms
Limitations	• Adhesive of some products can traumatize periwound upon removal • May roll in areas of friction (importance of low friction outer layer)
Common uses	Minor burns, skin grafts, donor sites, ostomy sites, pressure injuries, venous insufficiency injuries, neuropathic (diabetic) ulcers
Change time	• Should be changed when signs of saturation are visible along the edges or whenever good nursing practice dictates • Up to seven days or as directed by a healthcare professional



Wound care dressings[1] (continued)

Hydrocolloid

Formulation of elastomeric, adhesive and gelling agents; most hydrocolloids are backed with a semiocclusive film layer

Function	Absorption
Benefits	• Moisture-retentive • Encourages autolytic debridement • Impermeable to urine, stool and bacteria • Provides thermal insulation • Waterproof
Limitations	• Will likely traumatize fragile periwound upon removal • Leaves residue within the wound bed • May cause hypergranulation • Not to be used on infected wounds
Common uses	Pressure injuries, burns, venous insufficiency ulcers
Change time	• Should be changed when signs of saturation are visible along the edges or whenever good nursing practice dictates • Dressing may stay in place for up to 72 hours, depending on drainage



Hydrogel

80–99% water or glygerine-based wound dressings that are available in sheets, amorphous gels or impregnated gauzes

Function	For minimal to heavily exudating wounds
Benefits	• Moisture-retentive • Encourages autolytic debridement • Provides thermal insulation • May provide cushioning • Adherent and nonadherent forms
Limitations	• Adhesive of some products can traumatize periwound upon removal • May roll in areas of friction (importance of low friction outer layer)
Common uses	Minor burns, skin grafts, donor sites, ostomy sites, pressure injuries, venous insufficiency injuries, neuropathic (diabetic) ulcers
Change time	• Should be changed when signs of saturation are visible along the edges or whenever good nursing practice dictates • Up to seven days or as directed by a healthcare professional



Wound care dressings[1] (continued)

Transparent film

Thin, transparent polyurethane adhesive films that are impermeable

Function	Protects
Benefits	• Promotes autolysis • Can be used as a secondary dressing • Adhesive will not adhere to a moist surface (such as a wound bed)
Limitations	• No absorbent capacity • Not recommended for infection and arterial ulcers
Common uses	Prophylaxis on high-risk intact skin, superficial wounds with minimal or no exudate, eschar covered wounds when autolysis is indicated, secondary dressing for alginates and foam
Change time	• Should be changed when signs of saturation are visible along the edges or whenever good nursing practice dictates • Up to seven days and PRN per manufacturer



Pressure injury treatment matrix

Stage 1. Non-blanchable erythema

Drainage	Dry to moist	Moderate	Heavy
Cleanse			
Cleanse and pat dry	◆	◆	◆
Primary dressing			
Skin barrier to the periwound skin	◆	◆	◆
Antimicrobial foam			
Foam	◆	◆	◆
Hydrocolloid			
Hydrogel			
Calcium alginate with zinc			
Secondary dressing			
Composite			
Silicone bordered	◆	◆	◆



Stage 2. Partial-thickness

Drainage	Dry to moist	Moderate	Heavy
Cleanse			
Cleanse and pat dry	◆	◆	◆
Primary dressing			
Skin barrier to the periwound skin	◆	◆	◆
Antimicrobial foam	◆	◆	◆
Foam	◆	◆	◆
Hydrocolloid	◆		
Hydrogel	◆		
Calcium alginate with zinc		◆	◆
Secondary dressing			
Composite	◆	◆	◆
Silicone bordered	◆	◆	◆



Pressure injury treatment matrix (continued)

Stages 3 and 4. Full-thickness

Drainage	Dry to moist	Moderate	Heavy
Cleanse			
Cleanse and pat dry	◆	◆	◆
Primary dressing			
Skin barrier to the periwound skin	◆	◆	◆
Antimicrobial foam	◆	◆	◆
Foam	◆	◆	◆
Hydrocolloid			
Hydrogel	◆		
Calcium alginate with zinc		◆	◆
Secondary dressing			
Composite	◆	◆	◆
Silicone bordered	◆	◆	◆



Wound care suggested guidelines

Calcium alginate with zinc

Stage	Stages 3 and 4, full-thickness
Drainage	Moderate to heavy drainage



1. Clean the wound with a wound cleanser at each dressing change.
2. Pat the periwound skin dry.
3. Apply the alginate dressing.
4. Secure the dressing with a composite island, bordered gauze, rolled gauze, retention tape or net dressing.
5. Use foam dressing if the wound is draining heavily.
6. Change dressing once or twice a day if wound is heavily exudating. As the wound heals and exudation is reduced, dressing changes can be made less frequently (every two to four days) or as directed by a healthcare professional.

Foam

Stage	Stage 2, partial-thickness Stages 3 and 4, full-thickness
Drainage	Moderate to heavy drainage
Other	Can be used as a primary or secondary dressing



1. Clean the wound with a wound cleanser at each dressing change.
2. Pat the periwound skin dry.
3. Apply a foam dressing that is at least one and a half inches larger than the wound.
4. Secure the dressing with a rolled gauze, retention tape or net dressing if the foam is not self-adhering.
5. Change when signs of saturation are visible along the edges or whenever good nursing practice dictates — typically up to seven days.

Wound care suggested guidelines (continued)

Hydrocolloid

Stage	Stage 2, partial-thickness Stages 3 and 4, full-thickness
Drainage	Dry to moist wound



1. Clean the wound with a wound cleanser at each dressing change.
2. Pat the periwound skin dry.
3. Apply a skin prep barrier (cream or wipe).
4. Apply a hydrocolloid dressing that is at least 2 in. larger than the wound.
5. Use a sacral or butterfly-shaped dressing if it is a sacral wound or an ulcer located in the sacral or coccyx area.
6. Border the dressing with retention tape if the dressing does not have a border or additional support is needed.
7. Use an adhesive remover while changing the dressing to ease discomfort.
8. Change when signs of saturation are visible along the edges or whenever good nursing practice dictates. Dressing may stay in place for up to 72 hours, depending on drainage.

Hydrogel

Stage	Stage 2, partial-thickness Stages 3 and 4, full-thickness
Drainage	Dry to moist wound



1. Clean the wound with a wound cleanser at each dressing change.
2. Pat the periwound skin dry.
3. Apply a skin prep barrier (cream or wipe).
4. Use a hydrogel to line the wound bed (do not completely fill the cavity) or dampen the gauze. If using hydrogel impregnated gauze, line the wound so the gauze is covering the entire wound bed.
5. Use an antimicrobial gel to address bioburden in the wound.
6. Secure the dressing with a composite island, bordered gauze, rolled gauze, retention tape or net dressing.
7. Change when signs of saturation are visible along the edges or whenever good nursing practice dictates — typically one to three days.

Wound care suggested guidelines (continued)

Hydrogel sheet

Stage	Stage 2, partial-thickness Stages 3 and 4, full-thickness
Drainage	Dry to moderate drainage



1. Clean the wound with a wound cleanser at each dressing change.
2. Pat the periwound skin dry.
3. Apply a skin prep barrier (cream or wipe).
4. Apply a hydrogel sheet that is larger than the wound.
5. Cover with a composite dressing, transparent dressing or foam.
6. Change the dressing every one to three days, depending on the amount of drainage, or if the dressing is loose or soiled.

Transparent film

Stage	Stage 1 Stage 2, partial-thickness
Drainage	All levels of drainage



1. Clean the wound with a wound cleanser at each dressing change.
2. Pat the periwound skin dry.
3. Apply a skin prep barrier (cream or wipe).
4. Cover the wound with a transparent dressing that is at least 2 in. larger than the wound.
5. Use an antimicrobial film to address bioburden in the wound.
6. Change when signs of saturation are visible along the edges or whenever good nursing practice dictates — typically up to seven days.

Special considerations: tunneling and undermining

- Fill dead space to avoid exudate pooling
- Use antimicrobials to decrease bacteria count in exudate or tunneled spaces
- May use calcium alginate rope if you are able to remove it
- Use 100% collagen, which will dissolve in wound if the wound is clean and healing
- Assess weekly attached edges and healing or deterioration

Types of debridement[1,2]

Autolytic

Uses the body's own white blood cells and enzymes to lyse or break down necrotic tissue

- Process naturally occurs in a moist, vascular environment and is enhanced or supported by applying a moisture-retentive dressing
- Considered the most conservative method of debridement
- Least invasive and least painful method of debridement and requires minimal expertise
- Can take longer than other methods and does not allow frequent visualization of the wound
- Contraindicated in infected, heavily draining or deep cavity wounds
- Not recommended for resident who is severely neutropenic (low white blood cell count)

Enzymatic/chemical

Uses exogenous enzymes to liquefy necrotic tissue and destroys the adhesion between necrotic tissue and underlying tissue

- Enzymatic debriding agents require a physician's prescription
- Enzymes should be discontinued once the wound is free of necrotic tissue; if this does not occur within two weeks, alternate debridement methods should be considered
- Enzymatic debridement is contraindicated in wounds with exposed deep tissues
- Enzymes are not effective in a dry environment; therefore, eschar must be crosshatched to allow penetration of the enzyme, and the wound surface must be kept moist

Types of debridement[1,2]

Mechanical

Involves the use of force to remove devitalized tissue, foreign material, and debris from a wound bed. Uses the body's own white blood cells and enzymes to lyse or break down necrotic tissue.

Wet-to-dry dressings

- Involves applying a single layer of fluffed saline moistened gauze to the necrotic wound, covering with more gauze and allowing to dry for 8–24 hours
- May result in damage to healthy tissue
- Can delay healing and may be painful
- Low material costs and easy to perform

Wound cleansing

- Deliver wound cleanser to the wound surface using mechanical force to remove lightly adhered necrotic tissue, debris, and bacteria
- Designed for use on acute, minor integumentary injuries, and not for long-term use on chronic wounds

Sharp/surgical

Uses scalpels, scissors or lasers in a sterile environment to remove necrotic tissue, foreign material and debris from the wound bed

- Fastest and most aggressive form of debridement
- Early surgical debridement can prevent amputation and even loss of life due to sepsis; it is required when necrotic tissue is near vital organs and structures
- Surgical debridement is contraindicated when another form of debridement will suffice

Resident handoff and documentation

Handoff checklist

Communicate:

1. Type of treatment and dressing being used and when last changed and next due
2. Location, type and dimensions of wound
3. Characteristics of wound bed, tissue involved, exudate amount and quality and periwound skin
4. Any pain management resident is on
5. If resident has any questions about wound and treatment
6. How resident tolerated dressing change

Documentation elements

1. Document location of wound and whether dressing is intact or changed
2. Document the following elements if the dressing has been changed this shift:
   - Pain medication given and time
   - Wound measurements (L × W × D) in centimeters and location
   - Wound exudate, amount and quality, color and odor
   - Any necrotic tissue visible
   - Any erythema visible
   - Any induration or heat
   - Any undermining or tunneling and measurement
   - Any epithelialization (partial-thickness) or granulation (full-thickness) and approximate amounts
   - Dressing components
   - How the resident tolerated the dressing

References: 1. Bryant RA, Nix DP. *Acute & Chronic Wounds: Current Management Concepts.* 4th ed. St. Louis, MO: Elsevier; 2016. **2.** Myers, B. *Wound Management: Principles and Practices.* 3rd ed. Tulsa, OK: Pearson; 2014.



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