WOUND CARE DRESSINGS

and Choices for Care of Wounds in the Home

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Statistics from various resources report that many patients in home healthcare settings have wounds. These vary from surgical, pressure, neuropathic, trauma, stasis, and venous wounds. These require the assessment, knowledge, and expertise of a clinician to assist them with wound care management. The purpose of this article is to identify and categorize types of wound care products appropriate for the various types of wounds that clinicians care for and manage in the home.

Editor’s Note: This author has been a Certified Wound, Ostomy, Continence Nurse (CWOCN) for 3 years and prior to this, worked as a home health-care nurse for numerous years. In the transition to becoming a CWOCN, the complexity of chronic wounds in the home care setting was recognized. The clinician’s knowledge of properly identifying wounds and appropriateness of wound care products within her organization is a challenge. As a new CWOCN, the nurse was also able to identify the need for consultation with a CWOCN because of this complexity and the many products available.

Background
In home healthcare, clinicians are responsible not only for educating patients and their caregivers about wound care, but also considering the cost of dressings, the number of visits by clinicians, the cleanliness of the home environment, and the ability of the patient and his or her caregivers to manage wounds at home. Although all of this is important, the most important consideration is to match the wound with the most appropriate dressing for the wound. Although clinicians may be familiar with certain wound-care products, it is also extremely important to read product inserts before using a dressing, as the guidelines frequently change (Bryant & Nix, 2007).

When assessing a wound, the clinician must first identify the type of wound. Although the technology of wound care has advanced, it cannot change all the factors that contributed to the development of the wound, such as chronic pressure and uncontrolled diabetes. For wounds to heal and progress, contributing factors such as pressure, chronically elevated blood glucose, infection, and viability of wound tissue need to be addressed before topical treatment is applied. Some of these factors can be resolved by dressing choices and may assist with fighting infection and debridement of nonviable tissue.

Most wounds heal with proper wound moistness. According to Barbara Dale (2011) in her article “Say Goodbye to Wet-to-Dry Wound Care Dressings,” research over the past 50 years repeatedly shows that wounds heal faster and stronger when moist wound healing principles are used. If a wound is very wet and has a large amount of exudate, it needs to “dry out a little.” If a wound bed is very dry, moisture needs to be added. Many patients want their wounds to “air out” and do not understand that it is essential to have a moist wound environment for healing to occur. If the wound cells are too dry they will dehydrate and “die”; if the wound cells are too wet, they will “drown.” Wound tissue that is dry is much more prone to infection, scarring, and pain (Bolton, 2007).

Overview: Product Considerations
There are many wound care–specific products. According to BCC Research, the wound care industry in 2010 was a 2.0 billion dollar market.
The patient that the “gel” is normal and not a sign of infection.  
- Cover with a secondary dressing (this is the secondary dressing that is over top of the primary dressing, which is intact with the wound bed).  
- Consider ribbon or rope for tunneling and undermining.  
- Pack loosely into wound.  
- Change dressing when drainage is visually coming through secondary dressing.  
- Moisten and irrigate wound with normal saline if dressing is adhered to wound bed, before removing it.

Contraindications
- A wound with a dry wound bed.  
- A wound with a third-degree burn (Bryant & Nix, 2007).  
- Do not moisten dressing prior to placing in wound bed.

Antimicrobial Dressings
Antimicrobials are topical dressings or products used for wounds that are not healing because of infection, or wounds that are at high risk for infection. The advantage of antimicrobial dressings is a longer wear time; they can be left in place for several days. They are also the dressing of choice for a patient who is unable to change his or her own dressing, or for a patient who has an unclean living environment. Some may feel that these are expensive dressings, but they are cost-effective when used as recommended. This is because fewer supplies are used, fewer clinician visits are needed if daily dressings are ordered, and often healing time is shortened. This is one of the only categories with subsets: iodine, leptospermum honey, and silver.

Iodine-Based Antimicrobial Dressing
These dressings work by slowly releasing iodine, while at the same time absorbing drainage from the wound. These dressings can last up to 72 hours (Hess, 2008). They come in the form of a paste or gel.

Tips for Using Iodine-Based Antimicrobial Dressing
- Change the dressing at least three times per week or when the color of dressing goes from brown to yellow or gray (Hess, 2008).
Layers, combinations with hydrogels, creams, powders, and collagens.

**Tips for Using Silver Antimicrobial Wound Dressings**
- Some brands of silver alginate state the dressing can be changed every 21 days; this can explain cost savings with using less wound care supplies.
- Inform the patient that silver dressings such as silver alginates may turn a grayish-green color when wet.
- Change the dressing when saturated no matter what form of silver being used.
- Read each manufacturer insert for application and “wear time”; all silver dressings are different.
- Instruct patient to notify clinician before getting an x-ray, radiation, or any medical treatment; a physician may not want dressing on during a test, as it may interfere with results.
- Some staining on skin or tissue can occur due to silver that may darken or add a blue hue to the skin, which is temporary (Tomaselli, 2006).

**Contraindications**
- Do not use with enzymatic debrider agents, as it may inactivate them.
- Do not use with bleach solutions.
- Patient sensitivity to silver or sulfa drugs.
- Even though some brands of silver alginate antimicrobial dressings allow the dressing to remain intact for up to 21 days, regular wound assessment is important. The wound should be assessed at least weekly.

**Collagen Dressings**
Consider using a collagen-based dressing for wounds that just do not seem to heal or wounds that have stalled or have not progressed toward a healing goal. Collagen dressings help the wound heal by stimulating the collagen fibers, for new tissue and blood vessel growth (Brett, 2009). They are made of cowhides and or tendons, or porcine collagen (Bryant & Nix, 2007). Collagens are absorbent and provide a moist wound environment. They can stay in place up to 7 days, depending on the manufacturer. Collagens come in the form of gels, sheets, pads, powders, and particles. Some manufactures combine collagen with silver or alginate to make a combination dressing.
Instead of using a foam dressing topped with a dry dressing and tape, use a foam island composite dressing.

Contact Layer Wound Dressings
Contact layer wound dressings are a solution for dressings that are painful to change and traumatic to the tissue of the wound bed. They are nonadherent single-layer dressings applied directly to the wound base. Drainage comes through the woven or mesh-like material, allowing it to be absorbed by the secondary dressing (Bryant & Nix, 2007). Contact layers have the ability to stay in place for 1 week, which can be cost-effective. These are usually transparent so that you can assess the appearance of the wound bed. Some manufactures incorporate silver or medical-grade honey into the contact layer adding protection to wounds that are at a high risk for infection.

Tips for Using Contact Layer Wound Dressings
• Use with wounds that have a painful dressing removal.
• Use under Negative Pressure Wound therapy for “stuck foams” or painful removal.
• Clarify with the physician if the contact layer is to stay in place for 1 week and the secondary dressings be changed accordingly.
• Use with wounds that have friable tissue and bleed easily with dressing changes.

Contraindications
• Not for use in the tunnel of a wound (a tunnel is a tracking that extends from the wound to surrounding tissue; one cannot usually see the end of the tunnel).
• Do not use with evidence of thick wound exudate.
• Some manufacturers contraindicate their use of contact layer dressing in patients with third-degree burns.

**Foam Wound Dressing**
Foam wound dressings can be used on a wide variety of wounds. They are made of an absorbent sponge-like material that provides thermal insulation as well as a moist wound-healing environment. Foams are used for light-to-moderate draining wounds, and can be primary and/or secondary dressing. The various forms include pads, sheets, ropes, rolls, and pillow cavity dressings. Some manufacturers have formulated different shapes for heels, elbows, coccyx, and more. Some foams come with cleansers, silver, and contact layers incorporated into them.

**Tips for Using Foam Wound Dressings**
• Read all manufacturers guidelines; some foams have a special border that shows when dressing is saturated.

**Contraindications**
• Do not leave on heavily draining wounds for extended periods of time without checking wound because saturation may cause maceration to periwound skin.
• With many manufacturers, foam dressings are contraindicated for use on third-degree burns (ReliaMed, 2007).

**Hydrofera Blue Foam Dressing**
Hydrofera Blue Foam is a brand name, but this dressing is the only type of its kind—a bacteriostatic foam. Hydrofera Blue Foam dressing is applied differently than the other foam dressings because it needs to be hydrated to work effectively, while still absorbing moderate-to-excess amount of drainage. This is an absorptive foam made of Hydrofera polyvinyl alcohol sponge, methylene blue, and crystal violet. This foam inhibits growth of bacteria such as methicillin-resistant *Staphylococcus aureus* and vancomycin-resistant enterococci (Wounds, 2011).

**Tips on Hydrofera Blue**
• When applying this dressing, moisten with normal saline or sterile water and then ring out the excess. Do not use tap water.
• It is important to change the dressing every 1 to 3 days.
• The dressing should not dry out completely; instruct the patient to rehydrate the dressing with saline or sterile water.
• When the dressing color turns from blue to white, it needs to be changed (Hydrofera, 2012).

**Hydrocolloid Wound Dressings**
Hydrocolloid dressings generally consist of a semi-permeable film coated with an absorbent mass of sodium carboxymethylcellulose, pectin, or gelatin (Rivera & Wu, 2011). They are a very versatile dressing that are appropriate for stage I and stage II pressure ulcers, partial- and full-thickness wounds, and light to moderately draining wounds. Hydrocolloids can be used on clean wounds as well as wounds that need debridement. When placed on a wound with necrotic tissue, autolytic debridement can occur (Rivera & Wu, 2011). These dressings come in the form of gel, paste, and wafers. They come in various shapes and thicknesses.

**Tips for Using Hydrocolloid Wound Dressings**
• Warm the dressing in your gloved hands prior to application for better adherence.
• Stretch corner of dressing parallel to skin for easier removal.
Contraindications

- Highly exudating wounds.
- Third-degree burns.

Miscellaneous Wound Dressings

There are many miscellaneous dressings that do not fall in a specific category. We briefly explain what they are and how they can be used here.

- Specialty Absorptives: these are for highly exudating wounds. These dressings are often used as a secondary dressing for a wound with large amount of exudate. Abdominal gauze pads are a familiar specialty absorptive.
- Sodium Impregnated Gauze
  - Available in ribbons and sheets.
  - Daily dressing changes are required.
  - Good for “cleaning out a wound.”
  - Absorbs minimal-to-moderate amounts of drainage.
- Petroleum Impregnated Gauze
  - For skin tears, burns, skin grafts and donor sites, as well as no-stick dressings.
  - Often used for healthy, pink, granulating wounds.
  - Use in a single layer; a double layer can block drainage from leaving the wound.
  - Leave in place on a burn or skin graft and dried edges are trimmed off.
- Iodoform Gauze
  - Packing strips that are used for tunneling wounds.
  - Helps control bioburden and absorb drainage.
  - Change at least daily.
- Liquid Skin Protectants
  - Sealant that are made with polymer and solvent; with or without alcohol (Hess, 2008).
  - Used under adhesives to prevent epidermal stripping.
  - Used on incontinent associated dermatitis.
  - Available as wipes, sprays, swabs, and applicators.

Gauze

Available in many different forms:

- dry gauze,
- packing gauze, and
- roller gauze.
Gauzes are primarily used as a secondary dressing or historically as a “wet-to-dry dressing packing.” Wet-to-dry dressings are no longer recommended because dry dressings can cause damage to healthy tissue from nonselective tissue debridement, which can damage newly granulating tissue and may cause pain on removal (Dale & Wright, 2011; Rivera & Wu, 2011). Do not remove dry dressings; moisten if necessary.

**Transparent Film**
- Used primarily for intravenous dressings and secondary cover dressings.
- When removed the skin is at high risk for tearing, so do not use on fragile skin or over skin tears.
- Do not use with moderate to highly exudating wounds.

**Negative Pressure Wound Therapy**
Negative pressure wound therapy (NPWT) is often referred to as a “Wound Vac.” Although it is not a wound care dressing per se, NPWT is widely used in home care. M. W. Kaufman and D. W. Pahl report in their article, “Vacuum-Assisted Closure Therapy: Wound Care and Nursing Implications,” statistics comparing NPWT and saline-soaked gauze. In the article, they compared 1,032 Medicare home healthcare patients and 84 nursing home patients who all had Stage III and IV pressure ulcers on their trunk or trochanter. The home healthcare patients were treated with NPWT and low air loss beds; the nursing home patients were treated with saline-soaked gauze and low air loss mattresses. The home care patients had a healing time of 97 days at a cost of $14,546, whereas the nursing home patients had a healing time of 247 days and at a cost of $23,465 (Kaufman & Pahl, 2003). The purpose of this therapy is to accelerate wound healing by removing excess drainage, promoting granulation tissue, and maintaining a moist wound environment (Bryant & Nix, 2007). Components of the NPWT include the dressing, the suction tubing, containment system, and pump. The various forms of dressings include a black- or silver-based porous foam, a dense white foam that is moist or needs to be moistened by saline, or antibacterial gauze. After the wound is filled with the foam or gauze, a transparent dressing covers and suction is connected. The advantages for home healthcare patients are that it is a portable pump, the dressings are changed two to three times per week by home care clinicians, and it is a closed system giving the clinician control of a clean dressing change, regardless of the home environment.

**Tips for NPWT**
- Negative pressure allows better perfusion to the wound bed; remember a lack of drainage is not indicative of a problem.
- Explain dressing procedure to the patient as it can seem overwhelming.
- NPWT system needs to be “running” 24 hours a day, either plugged in or by using battery power.
- Apply white moist foam or appropriate contact layer over exposed bone or tendon.
- Use with caution on a patient with clotting disorders or on blood thinners.
- Make sure fistulas have been explored before using NPWT. If the fistula tracks to an organ use of negative pressure applied can be very dangerous.
- Document a sponge count for each dressing change (there have been cases of lost sponges in wound).

**Contraindications**
There are significant safety issues with the use of NPWT. The U.S. Food and Drug Administration (2011) discusses contraindications and information: http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/ucm244211.htm?utm_campaign=Google2&utm_source=fdaSearch&utm_medium=website&utm_term=negativepressurewoundtherapyproblems&utm_content=1
- Untreated osteomyelitis.
- Exposed vessels or organs.
- Malignant wounds.
- Black eschar unless specifically ordered by physician.
- Do not allow black foam to lay on unprotected skin.

**Summary**
Wounds demand complex care, thinking and, at times, may need to be referred to a wound care expert. There are many types of wound care products available for wound care management. The challenge for many clinicians is knowing
what type of dressing is appropriate for the various types of wounds. Clinicians provide an important connection in the physician–patient relationship in home care and especially in wound therapy.

So what happened to the 85-year-old patient mentioned in the opening of this article? What type of products did we use and why? Because of the patient’s unclean environment, a silver alginate was chosen for his venous ulcers. The silver helped with the infection, and a composite gauze dressing was used as a secondary dressing. On the stage 2 pressure ulcers, a hydrocolloid was used. Nursing visits for this patient were scheduled at two times per week and all the dressings were contained, which helped with the patient’s environment and healing.

Wound care is an increasingly important part of the role of the home care nurse. The critical thinking needed for the choosing of the best products based on the assessment should help patients and organizations support improved care and outcomes. In addition, the complexity of the patients and wounds may demand the experience of a WOC nurse or a CWOCN.

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