

SELF-ADAPTIVE DRESSING

COST AND BENEFIT ANALYSIS

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The purpose of this document is to address the cost and efficiency of using Self-Adaptive Humifiber dressing as compared to foam and other dressings, both in home care and hospital settings. The detailed analysis that follows highlights the major medical and cost saving benefits resulting from the use of Self-Adaptive dressings in place of other advanced wound dressings currently available.

SELF-ADAPTIVE DRESSING AT A GLANCE

Self-Adaptive dressing is a new class of super-advanced wound dressings with variable functionality. Self-Adaptive dressing is designed to work for any wound at any stage of healing, and significantly simplifies wound care by taking the guesswork out of wound dressing selection.

The dressing material can accommodate continuously changing wound conditions. By responding to feedback from underlying wound tissues, it can adjust to emerging requirements that may have been unknown or unpredictable when the dressing was initially applied.

Self-Adaptive Dressing dynamically balances the evolving moist wound environment, providing hydration or absorption depending on the instantaneous needs of wound and peri-wound skin. Dry areas of the wound stay properly hydrated, fluid from exuding areas is absorbed and locked in, and peri-wound skin is protected from maceration.

Where the savings come from:

1. Labor Cost Reduction
 - Lower number of visits
 - Reduced need for sharp debridement
2. Material Cost Reduction
 - Lower number of dressings needed for each wound
 - 60% inventory reduction, 100% inventory utilization
3. Care Protocol Simplification
 - Straightforward staff training
 - Better and more easily achievable treatment outcome both by patients or caregivers
 - Fewer mistakes

IMPROVED ECONOMY OF WOUND CARE

Through its unprecedented absorption capacity and its ability to lock in exudate, Self-Adaptive dressing far surpasses traditional foam dressings.

HIGH ABSORPTION CAPACITY COMPENSATES FOR MATERIAL COST

The absorption capacity of Self-Adaptive dressing under compression is up to 50% higher compared to any foam dressing currently on the market. This significant difference allows

caregivers to keep the dressing on the wound longer. As a result, dressings can be changed less frequently, and a lower number of dressings is required to complete the treatment. This provides substantial material cost savings.

REDUCED FREQUENCY OF DRESSING CHANGES REDUCES LABOR COST

Because caregivers do not have to attend to the wound as often, the reduced cost of nurse visits further improves the economy of wound care. Each home health care nurse visit costs \$80-100. The lower frequency of dressing changes required per month may cut the combined cost of nurse visits by 30-50% throughout wound treatment, while increasing nurse productivity.

REDUCED INVENTORY COST

The single function of a basic foam dressing – absorption – makes it necessary to supplement foams with other products, such as non-adherent contact layers, strike-through barrier secondary dressings, peri-wound skin protection ointment, or topical antimicrobials that reduce the growth of microorganisms, or carbon filled dressings to reduce odor. These products are intended to negate the many undesired effects that foam dressings cause.

Directly, foam dressings leave the caregiver with many additional labor-intensive tasks: selecting the supplementary products based on wound etiology and condition, preparing dressing assembly, and applying its various components to the wound. Indirectly, the need to manage a complex inventory incurs substantial added costs.

Self-Adaptive dressing provides an equal or better standard of care, and delivers it in the form of a single dressing with variable functionality. The design of Self-Adaptive dressing - which combines a non-adhering contact layer, an antimicrobial and strike-through barrier, and peri-wound skin protection - helps to prevent all the issues caused by traditional foam dressings, without the need for supplementary products.

BETTER TREATMENT OUTCOME

While it is widely acknowledged that foam-based dressings are the current industry standard for treating moderately to heavily draining wounds, a thorough analysis of their performance reveals essential flaws that degrade the expected benefits and slow down healing. These flaws are predictable considering the single function of foam dressing and its inability to adapt to the continually changing wound environment.

Self-Adaptive dressing acts according to feedback it receives from the wound, and is able to provide an optimal healing environment for all wound areas at the same time.

HEAVILY DRAINING WOUND AREAS: MACERATION PREVENTION

Because foam dressings are unable to effectively lock in absorbed exudate, it may be released onto wound edges and peri-wound skin even under slight pressure. The corrosive and often infectious exudate erodes wound edges and causes maceration of peri-wound skin. As a result, the wound site deteriorates, and the size of the wound increases.

In contrast, Self-Adaptive dressing completely locks in the absorbed exudate and does not release it even under the great pressure of body weight or a compression wraps, thus preventing maceration and speeding up the healing.

NOTE: Alginates and hydrofiber dressings lock in the exudate but have very low absorption capacity per unit area. New super-absorbent dressings, while comparable to Self-Adaptive in absorption capacity and locking in fluids, are also more expensive.

LIGHTLY AND NON-DRAINING WOUND AREAS: OPTIMAL MOIST ENVIRONMENT

The absorption provided by foam dressing, while reducing the overall drainage, also negatively affects the non-draining areas of the wound. For example, granulated wound edges may become desiccated with continued use of foam dressings, which may adhere to some areas and cause pain and tissue damage upon removal. Furthermore, the desiccated areas can no longer support epithelialization. This may result in surface necrosis, increased risk of infection, and can impede the healing of the wound.

In contrast, Self-Adaptive dressing is capable of simultaneously hydrating non-draining areas and absorbing exudate from draining areas. It prevents desiccation and allows cell proliferation to continue, thus reducing the healing time.

NOTE: Hydrating dressings (hydrogel) have low absorption capacity and are not recommended for use on wounds with both exuding and non-exuding areas. With its high levels of matrix metalloproteinases (MMP) and bacteria, unabsorbed exudate impairs wound healing, slowing it or even causing damage.

REDUCED NEED FOR SHARP DEBRIDEMENT

Self-Adaptive dressing has a unique ability to facilitate autolytic debridement and absorb and lock in liquefied slough and biofilms. After dressing removal, residual slough, if any, is soft and may be removed by gentle whipping. Two to four dressing changes twice a week are usually sufficient for complete removal of slough.

REDUCED PAIN AND ODOR

Slough removal and the prevention of wound desiccation result in dramatic pain reduction in most wounds. Additionally, the bacteriostatic properties of the dressing material prevent microorganism growth in the absorbed exudate and minimize odor.

Self-Adaptive dressing is non-adherent, so dressing removal is painless and non-traumatic.

The following table summarizes the performance of foam dressings as compared to the performance of Self-Adaptive dressing in evolving wound environment.

Comparison criteria	<i>Foam</i>	<i>Self-Adaptive</i>
Main function	Absorbs exudate	<ul style="list-style-type: none"> • Absorbs and locks in exudate • Hydrates dry areas • Removes slough
Effect for highly exuding wounds	<ul style="list-style-type: none"> • Causes maceration by releasing and transferring exudate to wound edge and peri-wound skin • Allows exudate leakage 	<ul style="list-style-type: none"> • Prevents maceration by locking in exudate • Prevents leakage under compression or body weight
Effect on low to non-exuding wound areas	Causes desiccation by drying out non-exuding areas	Prevents desiccation by maintaining optimal moist environment
Effect on patient comfort	<ul style="list-style-type: none"> • Exudate leakage • Wound pain • May adhere to wound • Odor • Need for painful sharp debridement of slough 	<ul style="list-style-type: none"> • Non-adherent • Reduced wound pain • Slough removal, reduced the need for sharp debridement • Reduced odor • Painless non-traumatic removal
Resulting effect on overall care cost	Higher cost due to: <ul style="list-style-type: none"> • Frequent dressing change • Longer healing time • Need for additional treatment modalities • Need for sharp debridement 	Lower cost due to: <ul style="list-style-type: none"> • Less frequent dressing changes • Less dressings needed • Effective prevention of any issues requiring additional • Reduced need for sharp debridement

SUMMARY

PROBLEM: COMPARABLE ADVANCED DRESSINGS ARE FUNCTIONALLY LIMITED

The modern wound treatment methodology of using absorbing dressings for exuding wounds and hydrating dressings for non-exuding wounds poorly handles the transition from an exuding to a non-exuding state. Dressings currently available on the market, including foam and super-absorbent dressings, cannot provide an optimal moist environment to all wound areas at the same time. Nor can they adequately react to the changing levels of exudation within the wound, delaying the healing and increasing the cost and duration of treatment.

SOLUTION: ONE DRESSING IS SUITABLE FOR ALL WOUNDS IN ALL HEALING STAGES

Self-Adaptive dressing treats each tissue type within the wound independently by dynamically adapting to the changing wound environment. It effectively manages the fluid that drains from exuding areas of the wound and supports granulation and epithelialization of non-exuding areas by maintaining a physiologically appropriate level of hydration.

BENEFITS: LABOR AND MATERIAL COSTS ARE REDUCED. BETTER OUTCOME.

The use of Self-Adaptive dressing brings immediate and significant material- and labor-related cost savings. In comparison with currently marketed advanced wound dressings, Self-Adaptive dressing eliminates impeding factors inherent in foam or other absorbing dressings, while facilitating consistently better care quality and faster wound healing.