Impact on Cost: Adhesive Foam Wound Dressing Comparisons in Home Care, Long-Term Care, and Hospital Settings

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Introduction

Background: Proper management of exuding wounds is paramount to optimal wound healing. Fluid handling capacity, including absorption and breathability, as well as dressing size and conformability are critical factors in determining the most appropriate wound dressing. Acute and chronic wounds can be challenging and costly to manage. Fluid, foam adhesive dressings should be used to optimize the moist wound environment and reduce the cost burden associated with their use.

Objective: Three models were developed to estimate the economic impact of various foam adhesive dressings being used in home care, long-term care, and hospital settings.

Methods: An economic model was developed using inputs of:

- Dressing and supply cost from HPIS/Global Healthcare Exchange
- Dressing wear time based on healthy human studies using artificial wound fluid simulating a moderate to high-exudative wound
- Nursing labor cost based on RN Bureau of Labor Statistics
- Dressing change time in minutes based on expert opinion

Costs were calculated for a 60-day treatment period for home care, 30-day treatment period for long-term care, and 7-day treatment period for hospital settings.

Figure 1: Artificial Wound Model Procedure

A 3 cm-stick pad was cut to the desired width but double the length of final wound size. The catheter tip was inserted into the folded pad. The pad was taped into a sandwich around the catheter using a strip of paper tape and gently adhered to the test site. The test dressing was applied over the wound model. A catheter tubing was secured with transparent dressings, providing easy access to the catheter hub. The catheter hub-lag was secured with a strip of cloth tape. Artificial wound fluid (0.1 ml) was injected into the model 12X per day at hourly intervals. B) Finished wound models showing details of the model through a transparent absorbent dressing. Dressings were assessed until failure for up to 7 days of wear. Failure was defined as dressing fail-off, adhesive border lift sufficient to cause leakage, migration or delamination of dressing layers.

Home Care

Model Assumptions:
- Modeling was based on inputs (assumptions) for dressing cost, dressing wear time, supplies cost, nursing care costs, and dressing change time.
- Treatment period was estimated to be 30 consecutive days.
- Wear time for each dressing was based on artificial wound model studies that measured wear time under simulated moderate to high-exudative conditions over a 7-day period (Figure 1).

Long-Term Care

Model Assumptions:
- Modeling was based on inputs (assumptions) for dressing cost, dressing wear time, supplies cost, nursing care costs, and dressing change time.
- Treatment period was estimated to be 7 consecutive days.
- Wear time for each dressing was based on artificial wound model studies that measured wear time under simulated moderate to high-exudative conditions over a 7-day period (Figure 1).

Conclusions

- Results of this economic model show that the projected longer wear times for Dressing A result in considerable material and labor cost savings.
- This study was supported by 3M Health Care and was developed by a team of Dressing Consultants.

* Dressing Footnotes
- Dressing A: 3M™ Teleflex™ High Performance Foam Adhesive Dressing
- Dressing B: Coloplast Biatain® Foil Adhesive Dressing
- Dressing C: Smith & Nephew Allevyn® Adhesive Dressing
- Dressing D: Medline Optifoam® Adhesive Dressing
- Dressing E: Molnlycke Maplex® Border Dressing
- Dressing F: ConvaTec Ven Frost® AC/E Adhesive Dressing
- Dressing G: Smith & Nephew Allevyn® Gentle Border Dressing

**Data reflects the dressings on the market at the time the studies were completed before March, 2010

References:
1. HPIS/Global Healthcare Exchange for dressing and supplies cost.
2. 3M Healthcare studies 05-01239, 05-01246, 05-01247, 05-01248, 06-01289, 06-11296, Data on file.
5. Medium-hrly RN labor cost for Long-Term Care & Hospital facilities, Bureau of Labor Statistics.