

Infected Post-Surgical Abdominal Wound



Cost Savings Through the Addition of MIST Therapy® to Standard Wound Care

Background

Surgical site infections are a common complication of care, occurring in 2-5% of non-abdominal surgeries and **up to 20% in abdominal surgeries**.¹ Infected abdominal surgical sites require the wound be left open and surgically closed after the infection is resolved. The impact of these infections was significant in 1990 as noted in the chart below and continues to be today.²



	Non-infected	Infected	Difference
Hospital length of stay	6 days	11 days	Nearly twice as long
Hospital readmissions <i>(within 30 days of discharge)</i>	7.4%	41%	Over 5 times greater
ICU admissions	18%	29%	1.6 times greater
Mortality	3.5%	7.8%	Over 2 times higher
Direct hospital cost	\$3,842	\$7,486 <i>(\$3,089 directly related to the infection)</i>	Nearly twice the cost

*1990 Data

As of October 2008, Medicare will no longer provide additional reimbursement for hospital-acquired post-operative infections.

Patient Profile: 75-year-old Female^{3,4}

Conditions: Type 2 diabetes, anemia, mental status change, collapsed lung, patient receiving nutrition via feeding tube, previous abdominal hernia repair. Has experienced multiple infections and failed grafts of post-surgical wound.

Care Setting: Long-term Acute Care

Pre-MIST Therapy

Wound: Large, full thickness, infected post-surgical abdominal wound.

Area: 14 cm x 24 cm = 336 cm²

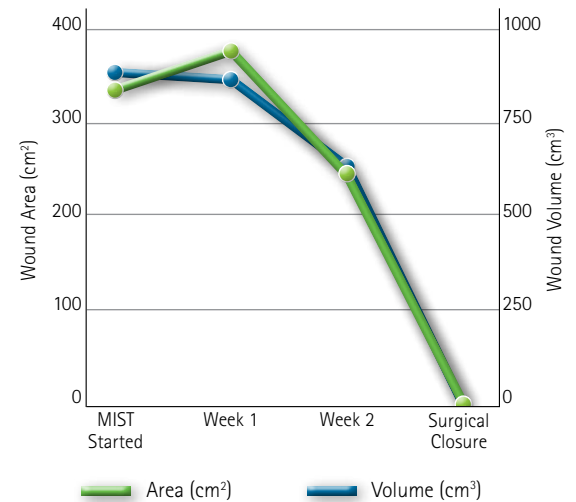
Volume: 14 cm x 24 cm x 2.8 cm = 940.8 cm³

Undermining of 6 cm in length was noted from 8 to 2 o'clock. Patient had multiple wound infections with graft disruption prior to her last surgery in late April during which time an alloderm graft was placed in the wound bed. Despite this application, a large abdominal wound remained that was in need of surgical closure.

Treatments: Treatment included negative pressure wound therapy prior to the addition of MIST Therapy 3 times a week.

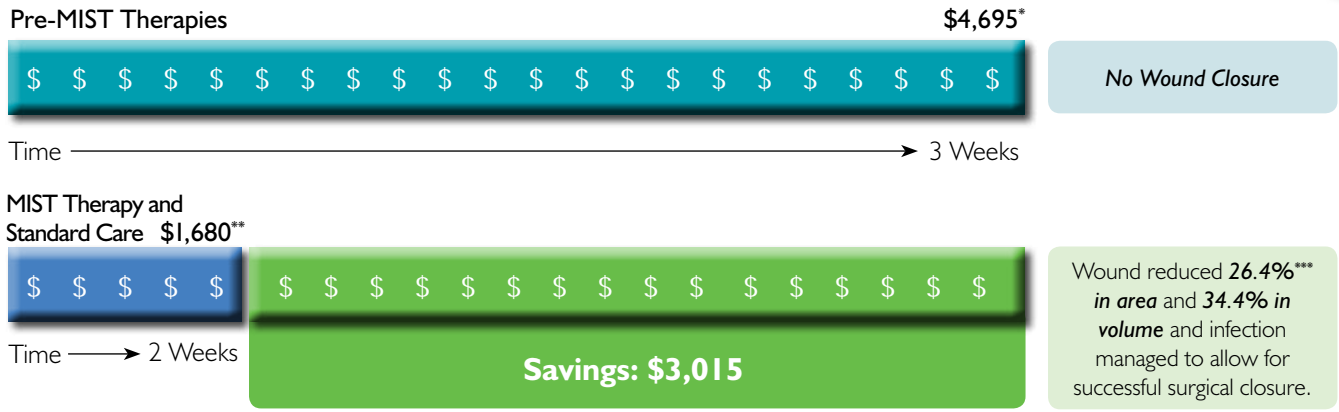
Post-MIST Therapy

Outcomes: The addition of MIST Therapy allowed the wound bed to increase in granulation from 80% granulation/20% alloderm to 95% granulation/5% alloderm which allowed the patient to be taken to surgery for successful closure.



The costs and cost savings depicted in this case study are illustrative only and represent the types of costs that may be incurred by a health care institution. They will vary for each institution, care setting, patient type, treatment course, etc., but provide an outline for consideration and discussion.

Potential Cost Savings[†]



The **cost savings** associated with MIST Therapy is the result of its ability to **effectively manage bioburden** and prepare the wound bed for surgical closure. In this case study, two weeks of MIST Therapy treatment were able to reduce the area and volume of the wound, increase the amount of healthy granulation tissue, and decrease the bacterial bioburden so surgery could be successfully completed.

* Cost was determined using \$565/week (\$60 canisters, \$36 for dressings, \$469 rental) for negative pressure wound therapy (NPWT) for three weeks prior to the addition of MIST Therapy (assumes 3 dressing changes per week and 3 failed grafts (\$1,000 each)). **Costs for additional surgical interventions and infection treatment were not included in this analysis.**

** \$275/week was added for MIST Therapy to the costs of NPWT (\$150 for applicators, \$125 rental).
 *** Results with MIST Therapy are not necessarily representative of and may vary with each patient.
 † This economic analysis is based upon empirical evidence and has not been derived from a formal cost effectiveness study.

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1. Auerbach AD. Chapter 20. Prevention of Surgical Site Infections. Agency for Health Research and Quality. <http://www.aHRQ.gov/clinic/ptsafety/chap20a.htm>
2. Kirkland KB, et. al. The Impact of Surgical-Site Infections in the 1990s: Attributable Mortality, Excess Length of Hospitalization, and Extra Costs. *Infect Control Hosp Epidemiol* 1999; 20:725-730.
3. Howell-Taylor M, Hall MG, Brownlee WJ, Taylor M. Combined Use of Negative Pressure Wound Therapy and Acoustic Pressure Wound Therapy to Prepare Infected, Open Postsurgery Wounds for Secondary Surgical Closure. Poster SAWC 2007.
4. Howell M. Case Study 000090-000307-000928 www.celleration.com

MIST Therapy System FDA Clearance. 510 (k) Clearance June 2005. "The MIST Therapy System produces a low energy ultrasound-generated mist used to promote wound healing through wound cleansing and maintenance debridement by the removal of yellow slough, fibrin, tissue, exudates and bacteria."

Please see full package insert for additional information on indications, contraindications, warnings, precautions, and side effects.