

Cost Effective Use of Combining Advanced Moisture Management Foam Dressings under Total Contact Casting for Improved Wound Outcomes

Jodi Boory BSN RN CRRN CHRN CWCA, Susan Rolniak St. John CRNP MSN, Elizabeth Shumaker RN MSN, Janie Hollenbach BSN RN WCC OMS DWC
UPMC Passavant Wound Healing Services



BACKGROUND

In our region, Medicare generally pays for once per week application of a **total contact cast (TCC)**.^{*} This type of casting is designed to off-load **diabetic foot ulcers (DFU)** to promote healing.¹⁻³ TCC is the established gold standard for the treatment of DFUs.⁴ Due to cost concerns, our out-patient wound care clinic's protocol is to use low cost traditional foam dressings under a TCC.

In our clinic's experience, the low cost traditional foam dressing did not manage the exudate causing a cost concern and clinical outcome challenges. We hypothesize that these challenges result in reapplication of the TCC more than once per week (non-reimbursed cast changes), additional patient care time (increased nursing costs) and decrease patient compliance (prolonged wound closure).

PURPOSE

The purpose of this study is to quantify the cost of these challenges and identify a unique solution that improves clinical outcomes:

1. **Eliminate** the need for TCC changes more than once per week
2. **Decrease** nursing costs at the outpatient wound center
3. **Decrease** time to heal the DFU

METHOD

A retrospective medical records review was completed for patients treated between January 2017 - December 2017.

Characteristics captured:

- Frequency of TCC changes
- Foam dressing type used
 - No foam dressing required
 - Traditional Foam
 - Advanced moisture management foam
- Total cost for treatment

RESULTS

January 2017 - December 2017 49 patients with DFU's were treated 27 required TCC to be implemented in their treatment of care:

- 6 patients had TCC with no indication for foam.
- 6 patients had TCC with traditional foam.
- 15 patients had TCC with advanced moisture management foam.

Poor management of wound exudate with TCC and traditional foam resulted in the need to reapply the TCC more than once per week.

Dressing changes were needed to address:

- drainage of exudate through the cast
- odor from the wound exudate
- maceration of the wound bed and periwound

The impact of these dressing changes:

- increased cost for duration for treatment
- decreased nursing efficiency
- decreased patient compliance
- prolonged healing times



Figure 1. When a traditional foam dressing was employed, malodorous wound drainage was observed on the casting. The traditional foam dressing could not manage the highly exuding DFU effectively requiring increased TCC dressing changes.

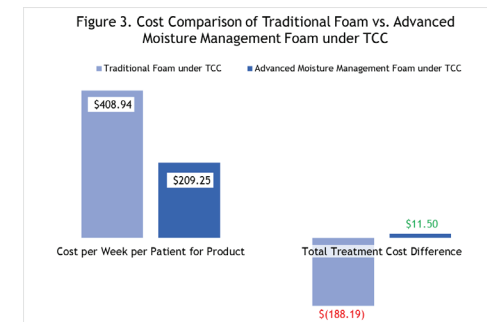


Figure 2. When an advanced moisture management foam dressing was employed, no wound drainage was observed on the casting. The dressing pulled away and trapped the excess exudate leaving the periwound skin dry and the wound bed moist for optimal healing.

RESULTS CONTINUED

Table 1. Summary of results from the 21 patients requiring TCC and foam.

	Dressing changes per week	Average Total Applications for Treatment Duration	Average Total Cost of Treatment
TCC and Traditional Foam	2	9.6	\$1,976.54
TCC and Advanced Moisture Management Foam	1	4.1	\$850.95



CONCLUSION

This study demonstrates several advantages to using an advanced moisture management foam dressing with TCC on highly exuding DFUs.

- TCC changes **reduced** to once per week for patients.
- Nursing costs **decreased** with an average savings of \$1125.59 per patient (Traditional \$1,976.54 - Advanced \$850.95).
- Time to heal **decreased** as a result of the moisture and exudate management.[†]

Optimizing wound exudate management results in increased patient satisfaction and increased compliance with wound care recommendations.

FOOTNOTES

Traditional Foam: Covidien Kendall Hydrophilic Foam Dressing 4" x 4"
Advanced moisture management foam: Milliken Healthcare Products ULTRA 4" x 5"
Total Contact Cast: Integra LifeSciences TCC-EZ System
^{*}Providers should always verify coverage with local contractors.
[†]Additional testing needed.

REFERENCES

1. Alexiadou, K.B. Douglis, J. (2012). Management of diabetic foot ulcers. Diabetes Therapy. doi: 10.1007/s13300-012-0004-9
2. Alliance of Wound Care Stakeholders. (2017). An economic evaluation of the impact, cost, and Medicare policy implications of chronic nonhealing wounds.
3. Centers for Medicare and Medicaid Services. (2017). Local coverage determination (LCD): Wound care (L3515).
4. Lehman, J. (2013). Total contact casting: Practice management considerations. Podiatry Management, 107-110.