



VHT: A New Innovative Wound Care Technology

This unique vapor treatment can improve practice economics and yield better outcomes.

BY PAUL KESSELMAN, DPM

Approximately \$9-\$13 billion dollars are spent annually on diabetic foot disease by public and private payors.¹ This is in addition to the overall costs to treat diabetic patients estimated in 2017 at \$237 billion dollars. Up to 1/3 of the direct costs of treating diabetes is estimated to be attributed to lower extremity care. Patients with chronic wounds are significantly more likely to be hospitalized, develop osteomyelitis and other chronic infections. Once a lower extremity amputation occurs, patient mortality is unfortunately expected within 5 years. The cost of man-

aging nonhealing DFUs is higher than the costs of the top five cancer treatments combined.²

Other socioeconomic costs for DFU treatment—including worker absence, home health and skilled care workers to care for patients—are equally staggering.

Standard wound care of four weeks consisting of weekly debridement, surgical dressings, myriad off-loading devices, etc. succeed in closing a mere 30% of wounds, especially in hard-to-heal anatomical locations. Typically, many providers resort to using other modalities. This includes cellular tissue products (CTP) having product, facility, and application costs exceeding tens of thousands of dollars. Success with a number of CTPs are product and practitioner-dependent and far from stellar. Providers may also resort to HBO therapy, with an average healing rate of 31%, with expenses at as much as \$1,000 per dive, repeated five times a week for four weeks or more, with costs exceeding \$20,000. Treatments utilizing negative pressure wound therapy (NPWT) also have expenses associated

VHT™

Vaporous Hyperoxia Therapy (VHT™) is an innovative technology that has the ability to transform wound care, dramatically improve practice economics and yield better outcomes. VHT™ is a patented FDA-cleared technology for the treatment of 9 types of wounds: DFU, VLU, post amputation healing sites, post-surgical, decubitus, skin graft sites, gangrenous, burn and frostbite-related wounds. It is an adjunct to standard wound care and improves the health of wounded tissue via the administration of a low frequency, non-contact, non-thermal hydrating mist, alternating with concentrated oxygen.

A 2019 study conducted by Dr. Dustin Kruse and recently published in *JAPMA*³ report wound closure rates exceeding 82+ % in 20 weeks or less when added to standard wound care. All patients in the study remained under the care of their doctor; the only variability between patients was the use of VHT™. VHT™ hyper-saturates tissue, reduces the bio-burden while stimulating angiogenesis, thereby promoting health and vitality to otherwise chronically degraded tissue.

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VHT administers a low frequency, non-contact, non-thermal hydrating mist, alternating with concentrated oxygen, to heal wounded tissue.

New Concepts and Studies

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VHT™ treatment brings advanced wound care with minimal patient discomfort into the private practice setting without any capital expenditure. Typical treatment protocol includes once weekly sharp debridement, twice weekly VHT™ treatments and other standard wound care as deemed necessary by the wound care provider.

VHT brings wound care into the private practice setting with minimal patient discomfort without any capital expenditure.

Clinical examples from the JAPMA report include that of an 18-month DFU which achieved 50% closure in 3 weeks and complete closure in 12 weeks (Figure 1), and an 8-month DFU which achieved 70% closure in six weeks with total closure in 11 weeks (Figure 2). Another was a 25-month heel DFU achieving 60% closure within two weeks and total closure within 12 weeks (Figure 3).

The reimbursement aspect of VHT™ provides some very valuable information for providers and payers. CPT code 97610 defined as: low frequency, non-contact, non-thermal, ultrasonic mist including topical application(s), when performed, wound assessment, and instruction(s) for ongoing care, per day, seems appropriate. In addition, MAP and third-party payers alike have provided prior authorization for VHT™ using CPT 97610.

The 2023 Medicare Fee for Service (FFS) schedule provides a National Average Non-Facility (Office) reimbursement of approximately \$451.00 with a range in reimbursements from approximately \$384-\$631 depending on the specific MAC fee schedule.⁴ Typically, FFS Medicare Administrative Contractors (FFS MAC) allow for up to 18 treatments in a 6-week period.⁵ Medicare Advantage Plans (MAP) and other non-Medicare plans may require prior authorization. Once authorized, frequency allowances for VHT™ often follow FFS MAC policies. Since the fee schedule allowances and frequencies vary by both the MAP and commercial payers, it is suggested to obtain this information when obtaining prior authorization.

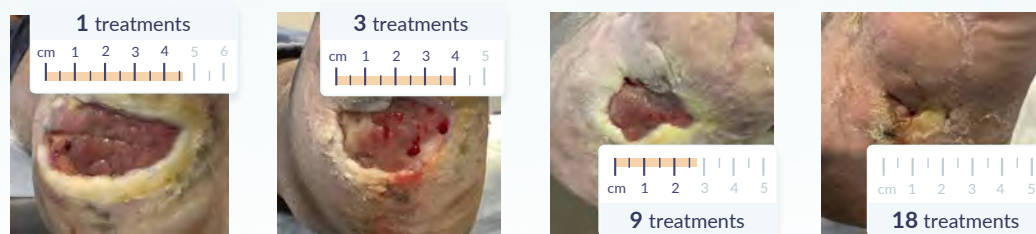
The National Correct Coding Initiative (NCCI)⁶ precludes reimbursement for other ulcer debridement-relat-

Despite application and supply costs, the net profit per use to the provider is approximately \$300 per treatment.

ed CPT codes for the same anatomical site(s) receiving treatment with VHT™ performed on the same date of service. This includes the most common CPT codes associated with ulcer debridement including surgical wound debridement codes 11042-11047 and other associated debridement codes 97597/97598. Other less frequently used CPT associated wound care codes presenting NCCI

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18-month DFU, Closed in 12 Weeks



Previous treatments used over 18 months:

- Standard wound care
- Aggressive offloading

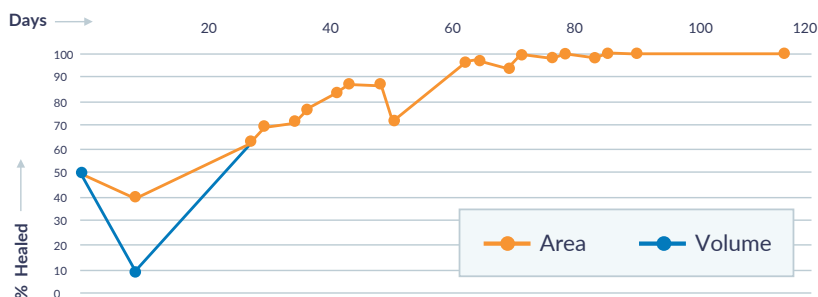


Figure 1



conflicts include CPT 11000, 11010, 11012, 11720, 11721. Performing VHT™ does come with some inherent costs (\$160) per treatment, which are not otherwise separately reimbursable. Despite these application and supply costs, the net profit per Fee for Service Medicare patient, averages approximately \$300 per treatment, depending

on the MAC. VHT™ therefore has the potential to generate approximately \$600 in revenue per patient per week. Given the allowance of 18 treatments afforded by most MAC, this amounts to \$10,800. In comparison providing six weeks of care with CTP can cost in excess of \$16,000-
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8-month DFU, Closed in 11 Weeks

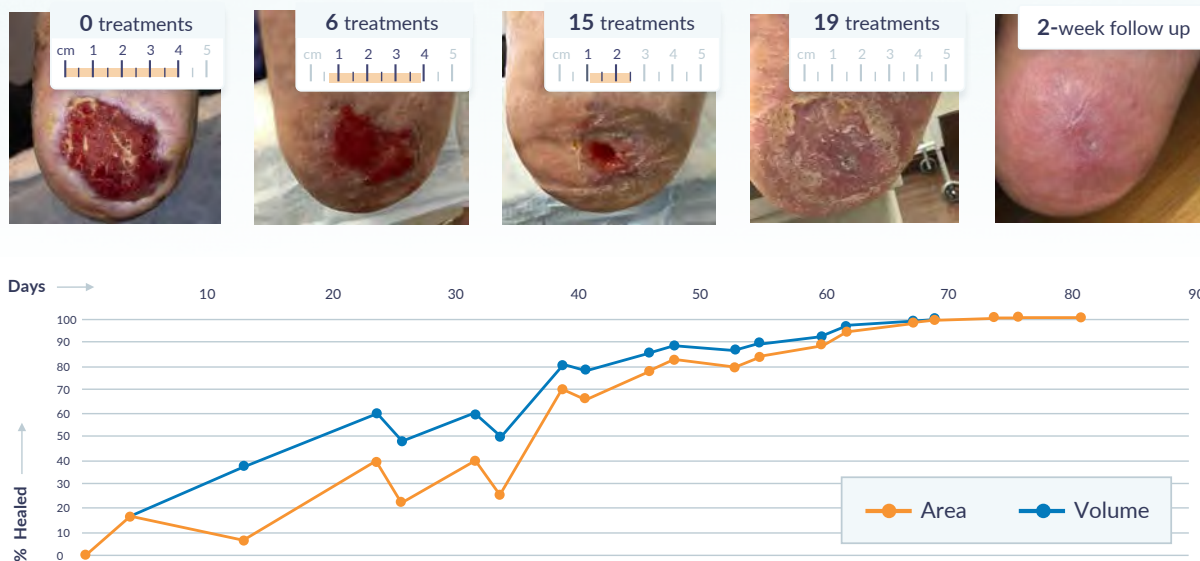


Figure 2

25-month DFU, Closed in 12 Weeks



Previous treatments used over 25 months:

- Standard wound care
- Surgical debridement
- 24/7 wound vac
- 60 HBO sessions
- Skin grafts

Figure 3



\$20,000),⁷ the overwhelming majority of which are vendor-related expenses, leaving very little net profit derived from the appropriate application code (e.g., 15275). There is also the wide variability of results with CTP and other treatments (HBO, NPWT, etc.) without yielding anywhere near the 82 + % success rate of VHT™. These estimates do not include additional associated facility costs, transportation costs and economic and other opportunity costs associated with providers' absence from their office, making VHT™ even more attractive to payers, patients and providers. MAP and third-party payers alike have provided prior authorization for VHT™ using CPT 97610.

Conclusion

VHT™ is a revolutionary new procedure now available to wound care providers, allowing them to provide advanced wound care services within their own office. As the government and third-party payers demand increasing value while decreasing costs, VHT™ can achieve that goal by closing wounds faster and at significantly lower costs. VHT™ allows the practitioner to decrease the long-term overall costs of wound care with no capital expenditure. VHT™ also allows the practitioner to keep patients out of the hospital with a significant increase in net revenue, while preserving patients' limbs. **PM**

References

- ¹ Rice JB, Desai U, Cummings AK, et al.: Burden of DFUs for Medicare and private insurers. *Diabetes Care* 37: 651, 2014.
- ² <https://www.diabetes.org/resources/statistics/statistics-about-diabetes>. Accessed January 10, 2020.
- ³ JAPMA. 2023 March; 113, 2; 10.7547/20-259
- ⁴ Search the Medicare Physician Fee Schedule: <https://www.cms.gov/medicare/physician-fee-schedule/search>
- ⁵ LCD for Wound Care Coverage Frequency for 97610 <https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=37228>
- ⁶ NCCI Edits : <https://www.cms.gov/medicare-medicare-coordination/national-correct-coding-initiative-ncci/ncci-medicare>
- ⁷ *J. Vasc Surg.* 2019 Jul;70(1):233-240. doi: 10.1016/j.jvs.2018.10.097. Epub 2019 Jan 1. PMID: 30606663



Dr. Kesselman is a retired board-certified podiatrist with extensive clinical and consulting experience in wound care and DME. He is a member of the Medicare Jurisdictional Councils and was an integral member of the committees involved with the initial development of LCD for Cellular Tissue Products. Dr. Kesselman is a medical advisor and consultant to many medical manufacturers, including Vaporox and is CEO of Park DPM and a partner in PARE Coding and Compliance and expert panelist for Codlingline.com. Dr. Kesselman also performs peer review for many major insurance companies.