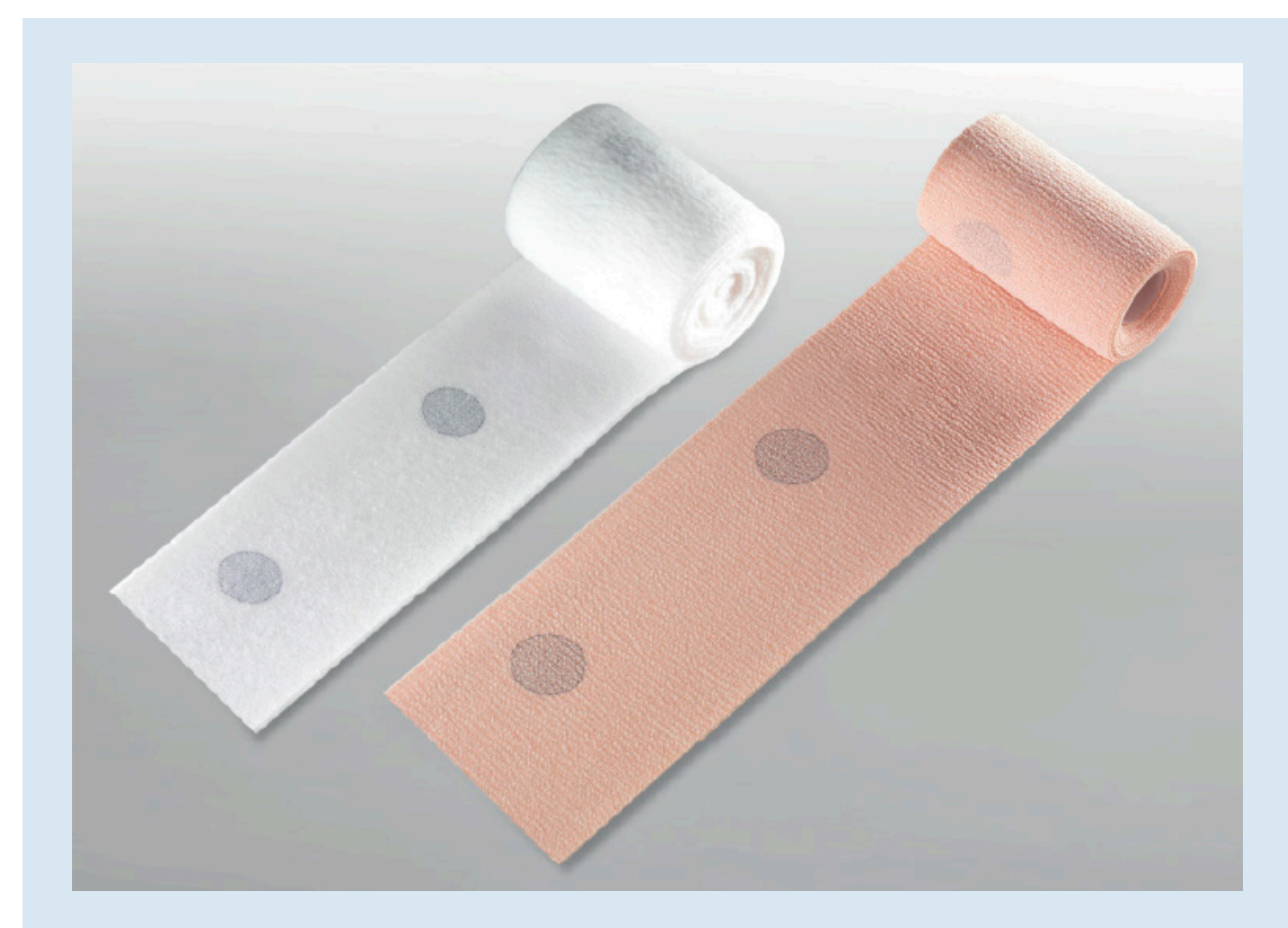


Health Economic Analysis of Two-Layer Bandage, the Dual Compression System (DCS) for Treatment of Chronic Venous Insufficiency Based on A Large Real Life Observational Study

Debashish Chakravarthy, Ph.D¹
1. Urgo Medical North America

BACKGROUND

- Chronic venous insufficiency (CVI) occurs in up to 40% of the population¹⁻³
- Healthcare costs exceed \$5,500 per episode and \$4.9 billion annually in the US⁴⁻⁷
- A Dual Compression System (DCS)* Bandage has been shown to be a safe, effective, and well-tolerated compression system in the treatment regimen of CVI⁸⁻¹³
- This DCS bandage System includes both a short and a long stretch bandage, therefore the name, DCS.
- This allows the bandage to provide therapeutic pressure both under ambulatory and non ambulatory conditions
- Visual indicators on both layers allow the correct length of stretching to be applied.
- Thus, over compression and under compression chances are reduced.
- Available in both narrow and wide ankle varieties
- Advanced fabric engineering makes the two layers in the DCS Bandage form a unique meshed structure when applied together.



UrgoK2 Compression Bandage,
Urgo Medical North America,
Fort Worth, Texas

OBJECTIVE & METHODS

OBJECTIVE

- The objective of the study was to estimate the total cost-per-response (CPR) for edema resolution and wound healing of patients with CVI treated with a 2LB system as part of their overall treatment regimen.

METHODS

- Patient level simulation model based on clinical data from large prospective, multi-center, observational study.
- Cost-per-Response (CPR) model assessed the cost per edema resolved and wound healed.

DATA

CLINICAL DATA

- 702 patients (56% female)
- Six weeks study period
- Pain reduction of 67%
- 31% of wounds healed
- 67% of edema cases resolved

ECONOMIC DATA

- Obtained from the published US literature

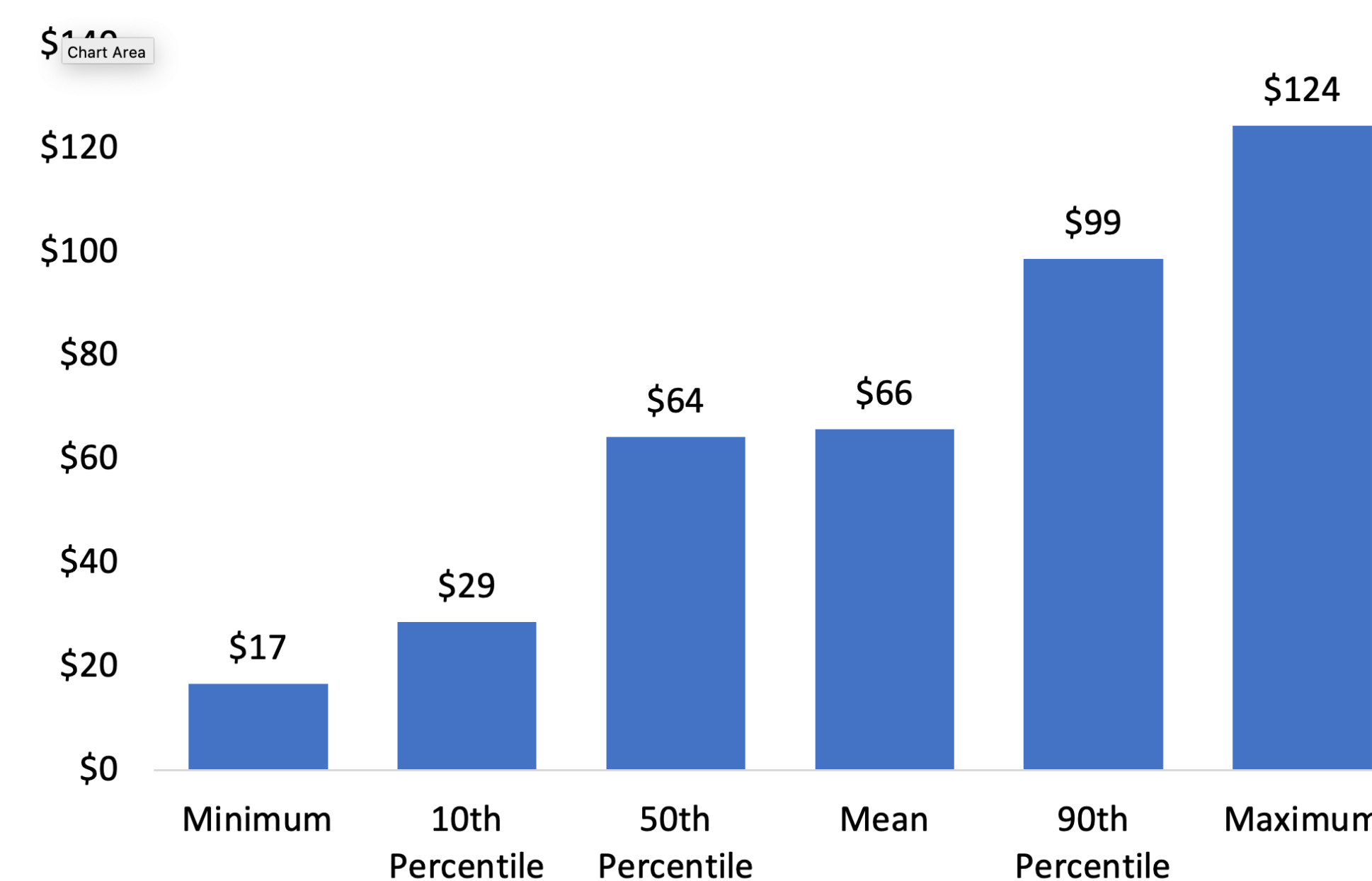


MODEL PARAMETERS

Parameter	Base Case	Sensitivity Analysis	
		Low	High
2-Layer Bandage System ¹⁵ , \$	\$12.00	\$9.00	\$15.00
Number of Dressing Changes ¹⁴	4	1	6
Time to Change Dressing, Seconds ¹⁶	65	59	71
WOCN Salary per Hour ¹⁶	\$26.00	\$26.00	\$26.00
Resolved Edema ¹⁴ , %	67%	60%	74%
Wound healed ¹⁴ , %	31%	28%	34%

RESULTS: 10,000 SIMULATED PATIENTS

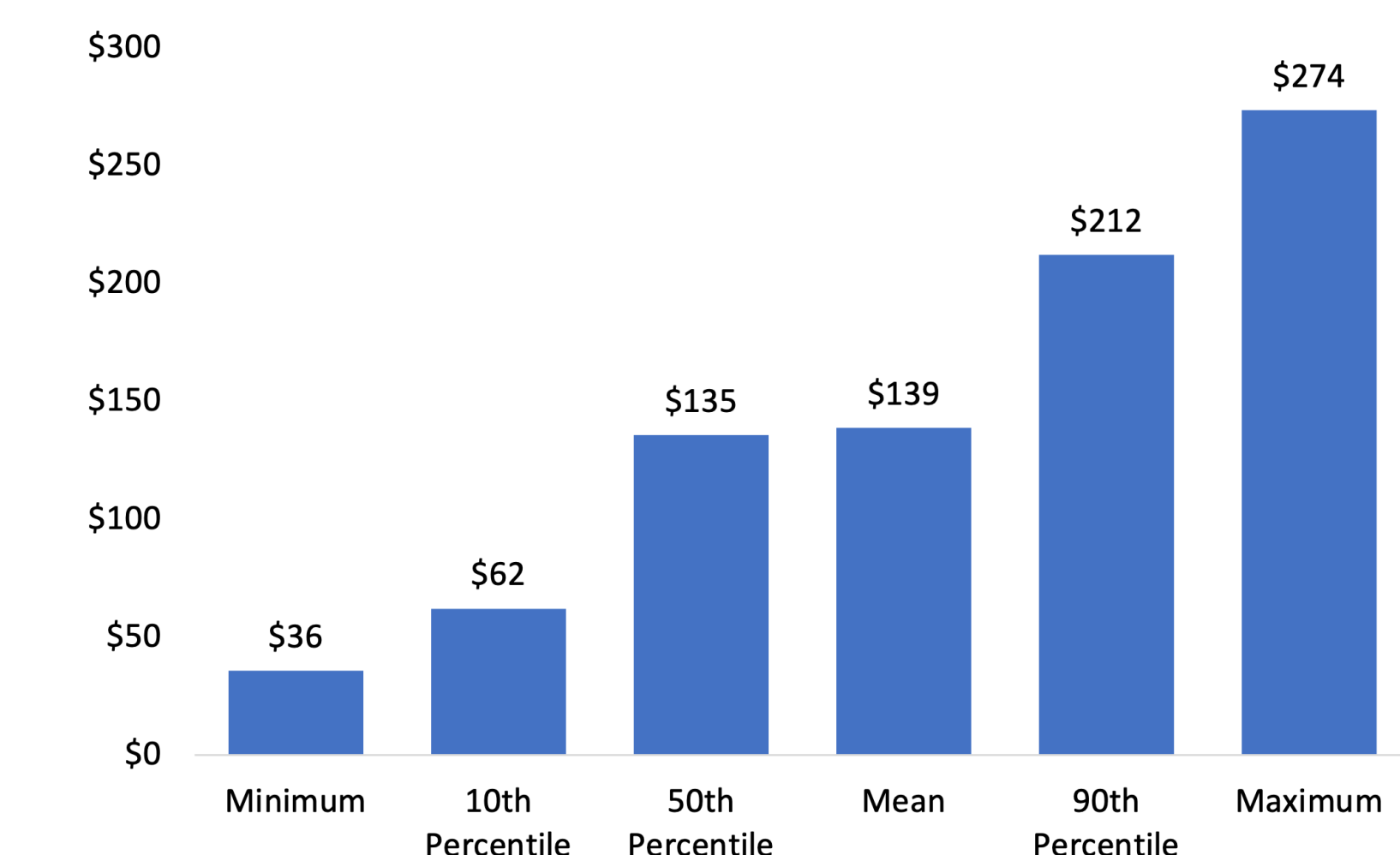
Cost Per Edema Resolved, \$



KEY FINDINGS

- Over a 6-week period, the DCS*bandage was expected to cost \$66 per edema case resolved.
- The cost to resolve one edema case with the DCS* bandage ranged from \$17 to \$124
- The additional cost of the DCS bandage to heal one edema case was negligible compared to the \$5,500 cost to treat and average venous ulcer.

Cost Per Would Healed, \$



KEY FINDINGS

- Over a 6-week period, the DCS bandage was expected to cost \$139 per wound healed resolved.
- The cost to resolve one edema case with the DCS bandage ranged from \$36 to \$274
- The additional cost of the DCS bandage to heal one wound was negligible compared to the \$5,500 cost to treat an average venous ulcer

DISCUSSION

- The CPR to resolve one case of edema or heal one wound was \$66 and \$139, respectively.
- The CPR approach is an effective means to evaluate the DCS bandage as it accounts for the entire cost of an episode - 6 weeks - of care and adjusts for treatment failures.
- This study complements prior studies demonstrating the safety, effectiveness, and patient tolerance of the DCS bandage system.
- In the context of the high costs of treating an open venous ulcer, the cost of treatment with this advanced product is negligible.
- We believe this is a unique health economic treatment of a large observational venous ulcer study in the published history of compression bandages.

REFERENCES

1. Beebe-Dimmer JL, et al. The epidemiology of chronic venous insufficiency and varicose veins. *Ann Epidemiol.* 2005;15(3):175-184.
2. Evans CJ, et al. Prevalence of varicose veins and chronic venous insufficiency in men and women in the general population: Edinburgh Vein Study. *J Epidemiol Commun H.* 1999;53(3):149-153.
3. Kim Y, Maximilian Png CY, Sumpio BJ, DeCarlo CS, Dua A. Defining the human and health care costs of chronic venous insufficiency. *Seminars in Vascular Surgery.* 2021;34(1):59-64.
4. Raffetto JD, Liggi D, Mascalco R, et al. Why Venous Leg Ulcers Have Difficulty Healing: Overview on Pathophysiology, Clinical Consequences, and Treatment. *J Clinical Med.* 2021;10(11): https://doi.org/10.3390/jcm10010029.
5. Melikian R, O'Donnell TF, Iafrafi M. The Economic Impact of Infection Requiring Hospitalization on Venous Leg Ulcers. *J Vasc Surg: Venous and Lymphatic Disorders.* 2022;10(1):96-101.
6. Olin JW, Beusterien KM, Childs MB, et al. Medical costs of treating venous stasis ulcers: evidence from a retrospective cohort study *Vasc Med.* 1999; 4(1):1-7.
7. Kolluri R, Lugli M, Villalba L, et al. An estimate of the economic burden of venous leg ulcers associated with deep venous disease. *Vascular Medicine.* 2022;27(1):63-72.
8. Lazareth I, Moffatt C, Dissemont J et al. Efficacy of two compression systems in the management of VLU: results of a European RCT. *J Wound Care* 2012; 21(11):553-565.
9. Jünger M, Ladwig A, Bohbot S, Haase H. Comparison of interface pressures of three compression bandaging systems used on healthy. *J Wound Care* 2009;18(11):474-480.
10. Hanna R, Bohbot S, Connolly N. A comparison of interface pressures of three compression bandage systems. *Br J Nurs.* 2008;17(Sup9):S16-S24.
11. Benigni JP, Lazareth I, Parpex P et al. Efficacy, safety and acceptability of a new two-layer bandage system for venous leg ulcers. *J Wound Care.*2007;16(9):385-390.
12. Tai HQ, Chaen LCR, Boey J, Kime S, et al. A dual pressure indicator, two-layer compression system for the treatment of venous leg ulcers: a review. *Journal of Wound Care.* 2021;30(Sup12):https://doi.org/10.12968/jowc.2021.30.Sup12.56.
13. Goka EA, Poku E, Thokala P, Sutton A. Clinical and economic impact of two-layer compression system for the treatment of venous leg ulcers: a systematic review. *Wounds.* 2020;32(11):11-21.
14. Stucker M, Munter KC, Erfurt-Berge C, et al. Multicomponent compression system use in patients with chronic venous insufficiency: a real-life prospective study. *Journal of Wound Care.* 2021;30(5):400-412.
15. Urgo Medical. <https://www.urgomedical.us/products/urgok2>. Accessed on January 20, 2023.
16. Chakravarthy D, Mallow P, Pilati L. The Health Economic Implications of a Comparative Time and Motion Study done on Two Bandage Systems, One Traditional Four Layer System, the Other a Novel Two Layer Dual Compression system (DCS). Poster Presented at The Symposium on Advanced Wound Care (SAWC) Fall Conference, November 3-6, 2022.