**A randomized controlled trial to assess the cost-effectiveness of a novel, simple modification to the negative pressure wound therapy system**

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***Abstract:***

**Summary:** Negative pressure wound therapy (NPWT) has shown remarkable adaptation in wound management worldwide. Numerous studies have provided evidence that demonstrates both the medical and financial advantages of NPWT. In this study, the V.A.C.® Therapy System (Kinetic Concepts Inc. (KCI)), one of the leading commercially used NPWT systems, has been utilized to treat patients with either acute or chronic wounds requiring surgical intervention, with the aim of demonstrating the efficacy of using a modified version of the VAC system while reducing the total associated cost.

**Method:** The patients were divided into two randomly selected groups using randomization generator software. A modification was made by replacing the disposable canister provided by KCI with an alternative re-usable canister (Baxter, Inc.); one group was assigned to use the conventional VAC Therapy System and the other was assigned to use the modified version. Our study aimed to investigate whether this modification would lower the cost of the V.A.C.® Therapy System while still achieving the desired outcome.

**Results:** The V.A.C.® Therapy System contributed to improving the Wound Bed Score (WBS) in both groups, which supports previous findings on the effectiveness of NPWT while reflecting that the modification did not negatively impact the functionality and the integrity of the V.A.C.® Therapy System. Furthermore, the average daily consumables cost was markedly reduced in the modified group compared to the standard group, which reduced the overall cost of treatment.

**Conclusion:** It is possible to use the V.A.C.® Therapy System to its full advantage, while minimizing the financial burden of using it.

