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Evidence in focus

PICO[◊] Single Use Negative Pressure Wound Therapy System (sNPWT) is associated with significantly lower healthcare resource utilization (HCRU) costs and likelihood of dehiscence following cardiovascular surgery compared to PREVENA™ in real-world use

Smith+Nephew

Bashyal RK, Searle R, Nherera LM, Wright A. Effects of single-use negative pressure wound therapy on healthcare use: US analysis of a large claims database. *J Wound Care*. 2025;34(8):555–562.

Overview

- Retrospective review of the US PREMIER PINC AI Healthcare Database for patients receiving either PICO sNPWT or PREVENA™ following cardiovascular surgery between January 2017–June 2022
 - The study included and compared over 5,000 adult patients
- Study endpoints included clinical and HCRU outcomes
 - Clinical outcomes included surgical site complications (SSCs)
 - HCRU outcomes included length of stay and costs at admission and post-surgery

Results, compared to patients receiving PREVENA™

57.8% significantly lower odds of dehiscence with PICO sNPWT (p<0.01)

- Patients that received PICO sNPWT following cardiovascular surgery showed reduced odds (p=ns) of developing:
 - Surgical site infection (SSI) at 30 days
 - Superficial SSI at 30 days
 - Deep SSI at 90 days
 - Seroma at 30 days



9.1% significantly lower length of stay for patients receiving PICO sNPWT (p<0.0001)

Significantly lower costs for patients receiving PICO sNPWT (p<0.0001)



-10.34%
reduced costs
at admission



-12.46%
reduced costs
30 days
post-surgery



-12.65%
reduced costs
90 days
post-surgery

Methodology



PREMIER Healthcare Database



2,552 PICO sNPWT patients



2,552 PREVENA™ patients

Cardiovascular surgery

PICO sNPWT vs PREVENA™



Assess the effect of two sNPWT devices on HCRU and SSCs during real-world use

Conclusion

In real-world use, the implementation of PICO sNPWT following cardiovascular surgery demonstrated significant reductions in the odds of developing dehiscence compared to patients receiving PREVENA™. Additionally, PICO sNPWT demonstrated significantly lower costs and reduced financial burden to healthcare providers following cardiovascular surgery compared to patients receiving PREVENA™.

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