Potential Budget Impact of Negative Pressure Wound Therapy With Instillation and Dwell Time Versus Control Therapies for Wound Management in Mexico

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Background and Aim

- The health benefits of negative pressure wound therapy with instillation and dwell time (NPWTi-d) are documented in a recently published systematic review and meta-analysis.[1] There are currently no large, comparative economic studies designed to assess the overall value of NPWTi-d versus other wound management strategies.
- As an alternative approach, a health economic model was developed to estimate the economic impact of using NPWTi-d versus commonly used alternative therapies (control,negative pressure wound therapy without instillation, gauze dressings, or gentamicin polymethylmethacrylate beads), for the adjunctive management of complex chronic and acute wounds, in Mexico.

Methods

- The per patient budget impact of implementing NPWTi-d was estimated from a public hospital perspective using a health economic model.[1]
- Clinical parameters were derived from a published systematic review/meta-analysis of 13 comparative studies comprising 720 patients.[2]
- The average number of wound-related operating room operating room (OR) visits was 1.77 for NPWTi-d and 2.69 for the control group. Length of therapy was 9.88 versus 21.80 for NPWTi-d and control, respectively.
- Overall costs were estimated as the sum of three main components: cost of hospital stay for duration of therapy, cost of therapy (device, dressings, canisters and/or instilled solutions), and cost of OR visit associated with excisional debridement.[3]
- One-way sensitivity analysis (OWSA), using a +/-20% value variation for all model parameters and break-even point analysis was used to support the model predictions.
- Local costs of the control therapies and materials were used for the calculation.
- The hospital costs used were from the Unit Costs by Level of Medical Care updated to 2023 and debridement costs were from the groups related to the diagnosis (GRD-IMSS) 2017 updated to 2023.[4]
- The effect of length of therapy variation for NPWTi-d was explored through a break- even point analysis.

Results and Conclusion

- The estimated total cost reduction using NPWTi-d was $15,246 (40.8%) for Mexico. **(Figures 1)**
- OWSA shows that the main cost-drivers are the OR debridement events and the OR debridement costs. **(Figure 2)**
- Variations within +/-20% of the input values do not impact the potential savings trend.
- A break-even point analysis shows that the NPWTi-d length of therapy could be increased by up to 2.98[ǂ] times for Mexico.
- The use of NPWTi-d could result in cost-savings for all public hospitals in Mexico, derived from debridement and hospitalization.

Figure 1: Direct per-patient costs

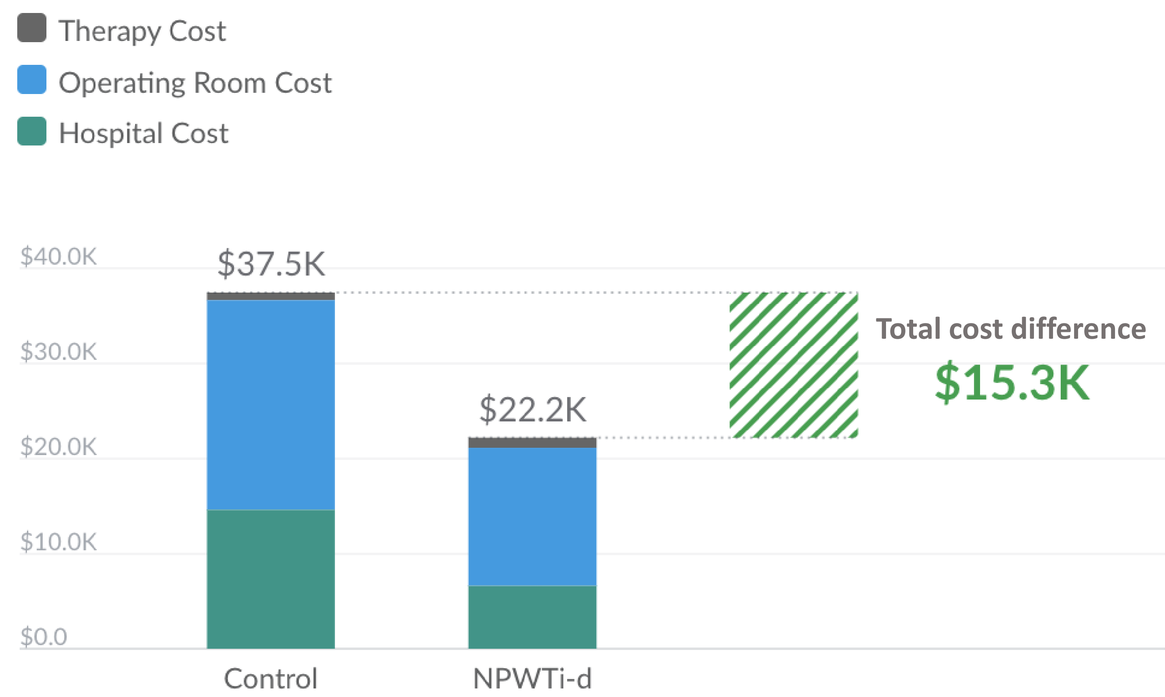
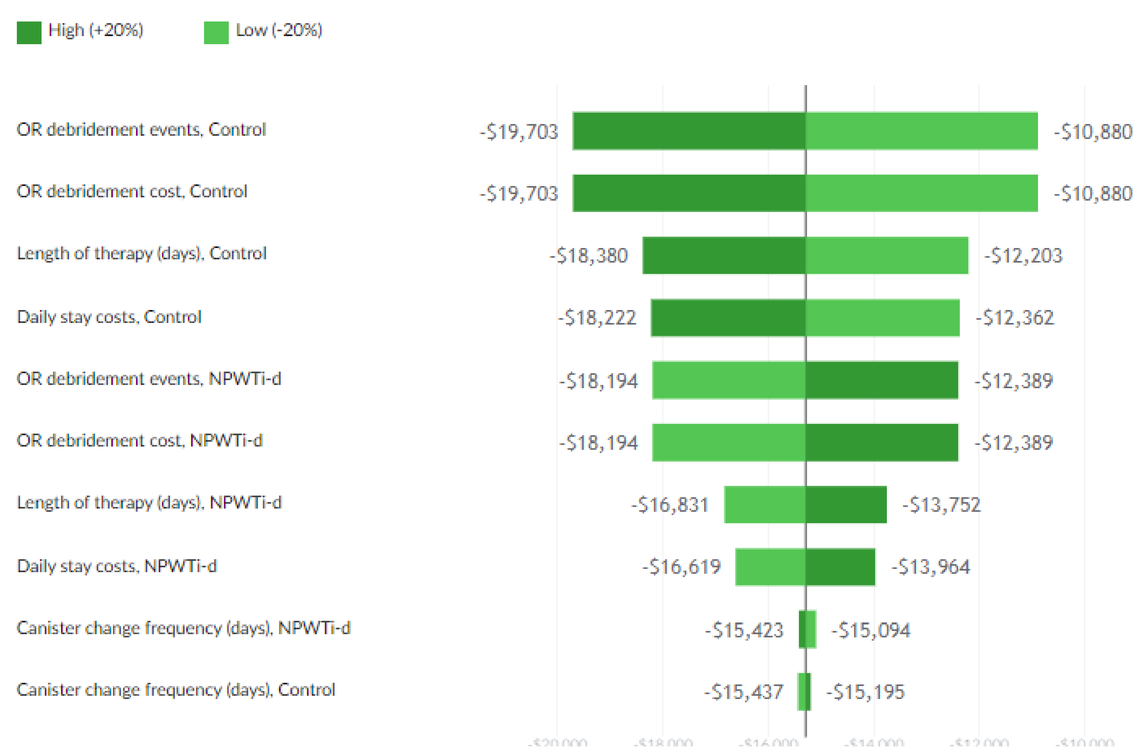


Figure 2: One-way sensitivity analysis



References

1. Gabriel A, Camardo M, O'Rorke E, Gold R, Kim PJ. Effects of Negative-Pressure Wound Therapy With Instillation versus Standard of Care in Multiple Wound Types: Systematic Literature Review and Meta-Analysis. Plast Reconstr Surg. 2021 Jan 1;147
2. Kim PJ, Lookess S, Bongards C, Griffin LP, Gabriel A. Economic model to estimate cost of negative pressure wound therapy with instillation vs control therapies for hospitalised patients in the United States, Germany, and United Kingdom. Int Wound J. 2021 Sep 28
3. Unit Costs by Level of Medical Care updated to 2023. Published in the Official Gazette of the Federation (DOF for its acronym in Spanish): https://www.dof.gob.mx/nota_detalle.php?codigo=5672661&fecha=29/11/2022#gsc.tab=0
4. Book: Groups Related to the Diagnosis from IMSS (GRD-IMSS) 2017, updated to 2023.

[ǂ] Corrected after abstract submission

Poster MT11
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