

Objectives

- Closed-incision negative pressure therapy (ciNPT) decreases the rate of wound complications in oncoplastic breast surgery (OBS)
- We aimed to examine the cost-utility of ciNPT in OBS

Methods

- A literature review obtained the probabilities and outcomes for the treatment of unilateral breast cancer with OBS with ciNPT versus without
- Reported utility scores in the literature were used to calculate quality adjusted life years (QALYs) for each health state
- A decision analysis tree was constructed with rollback analysis to determine the more cost-effective strategy

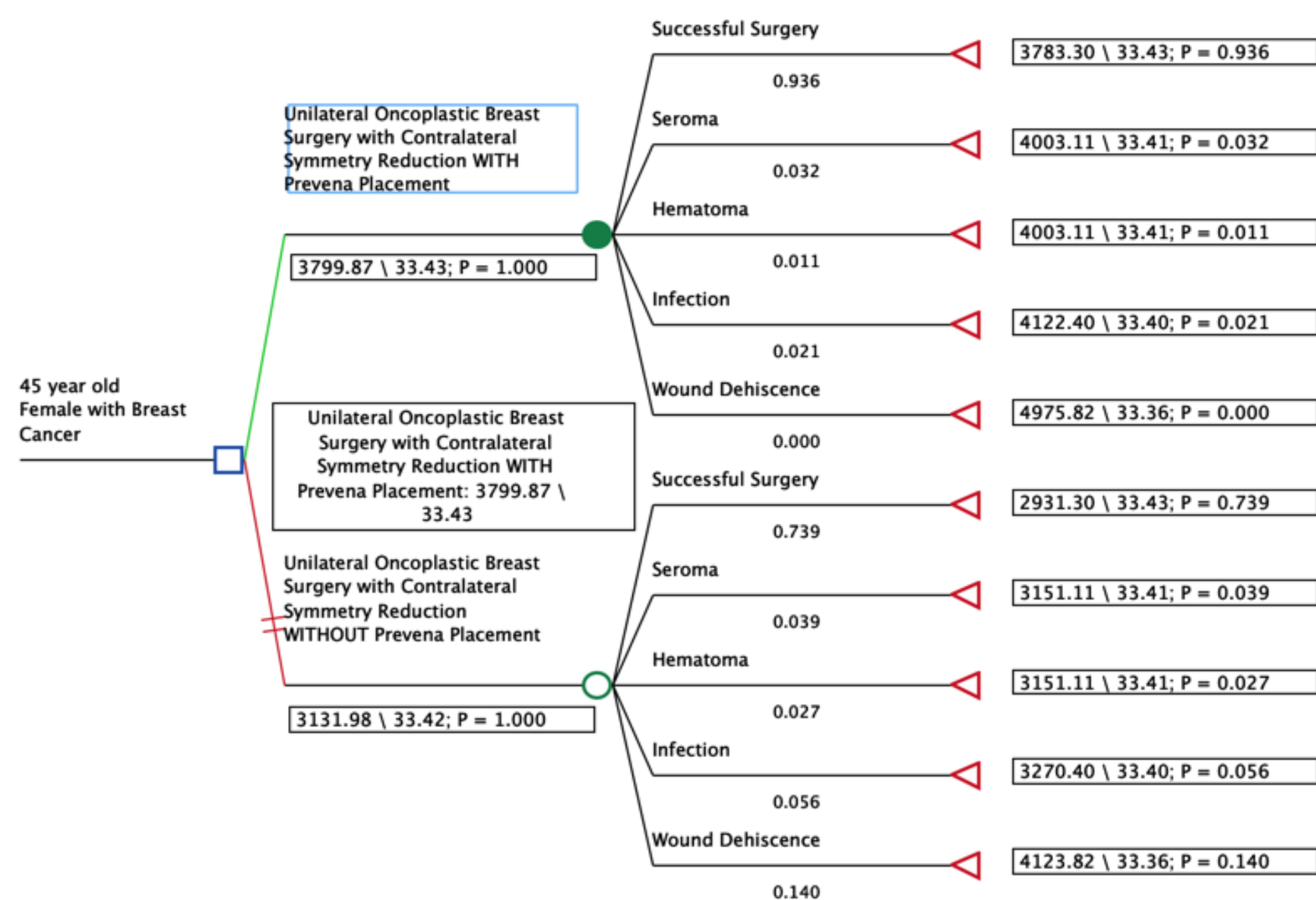


Figure 1. Decision tree. The top green line represents the cost-effective strategy.

Results

- OBS with ciNPT is associated with a **higher QALY** of 33.43 compared to without (33.42) and relative cost increase of **\$667.89**
- The resulting Incremental Cost-Utility Ratio (ICUR) of \$57432.93/QALY favored ciNPT
- **ciNPT was the more cost-effective strategy if the cost of ciNPT was <\$1,347.02 or if the probability of wound dehiscence without was >8.2%**
- Monte-Carlo analysis showed a confidence of 75.39% that surgery with ciNPT is more cost effective

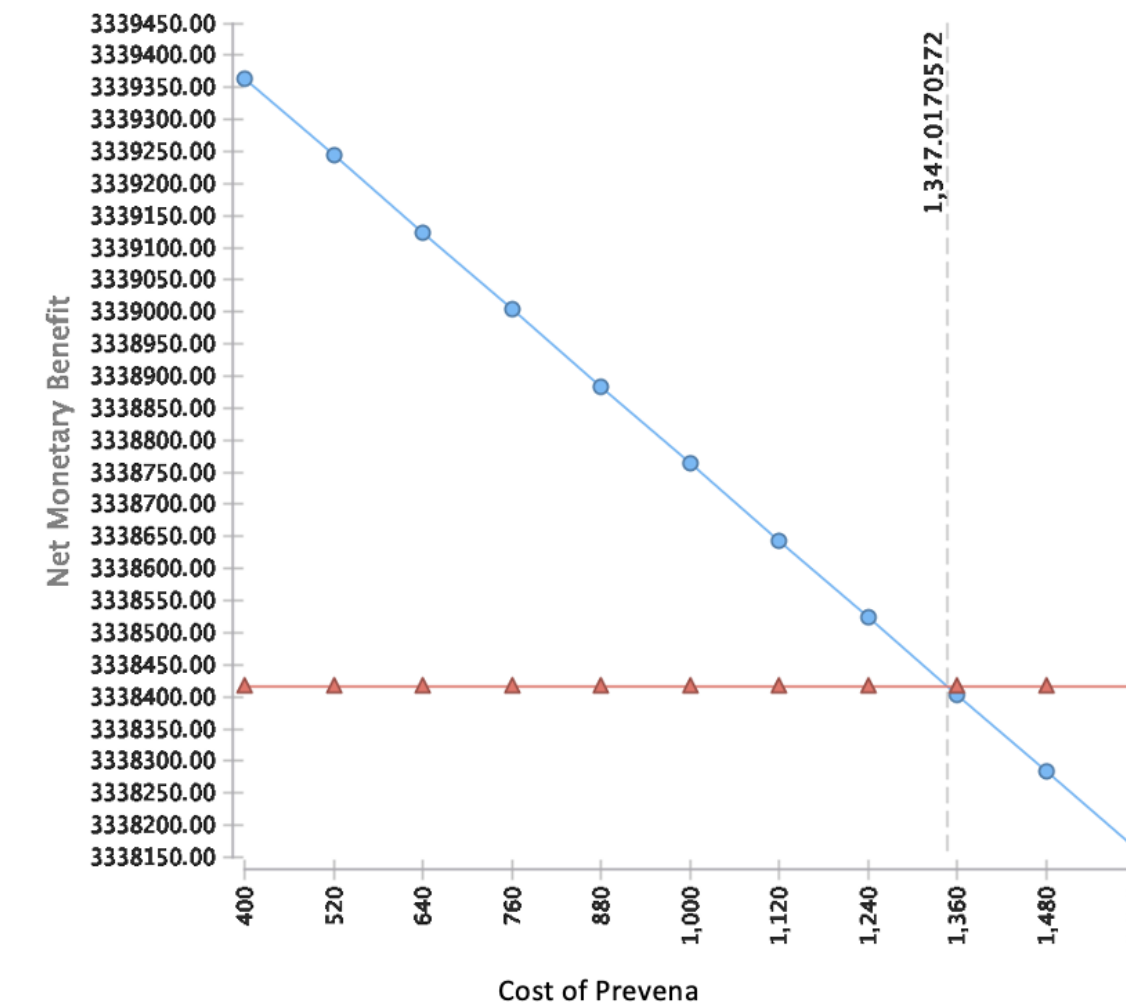


Figure 2A. One-way Sensitivity Analysis. At WTP of \$100,000, Oncoplastic Breast Surgery with Prevena remains the more cost-effective strategy if the cost of Prevena is less than \$1,347.02.

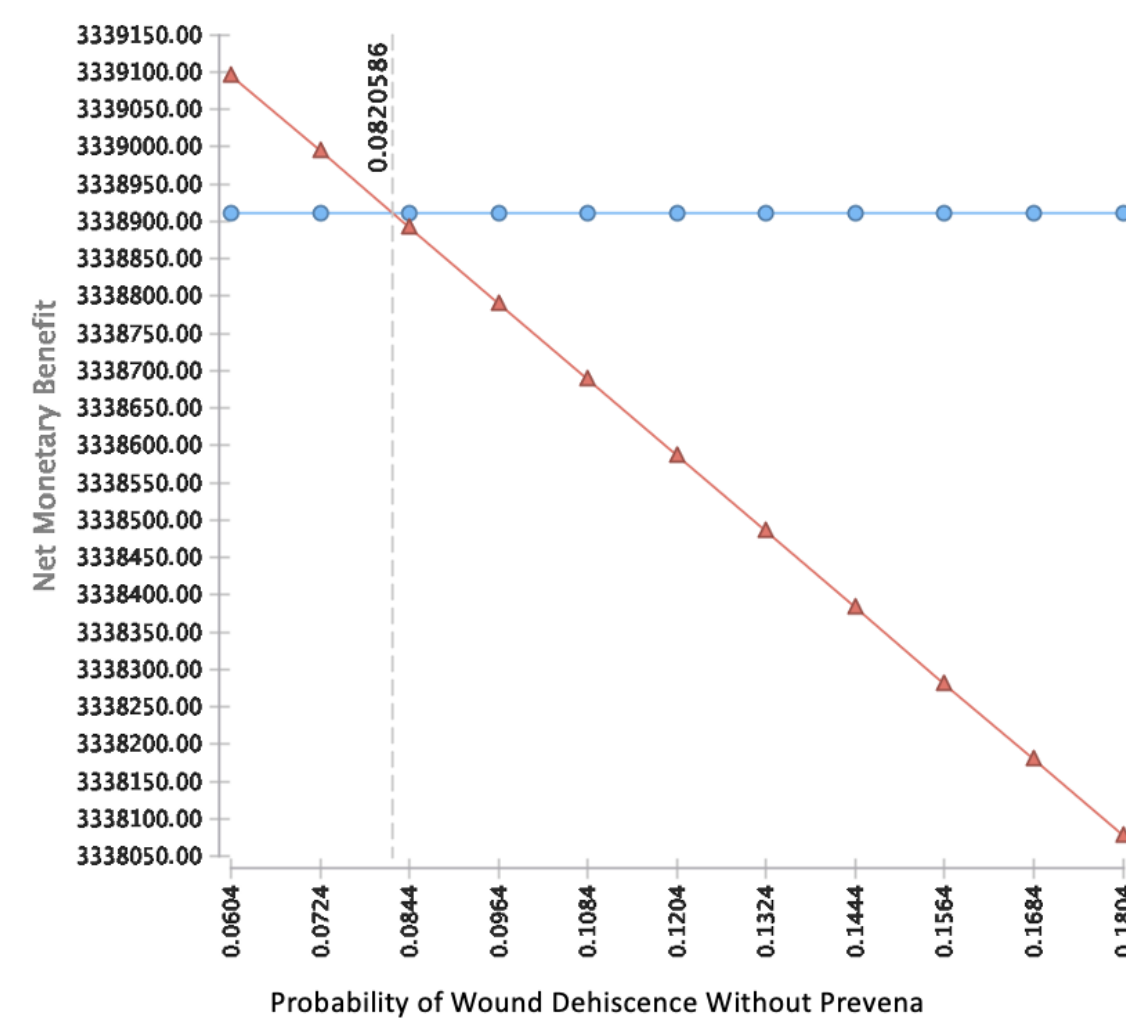
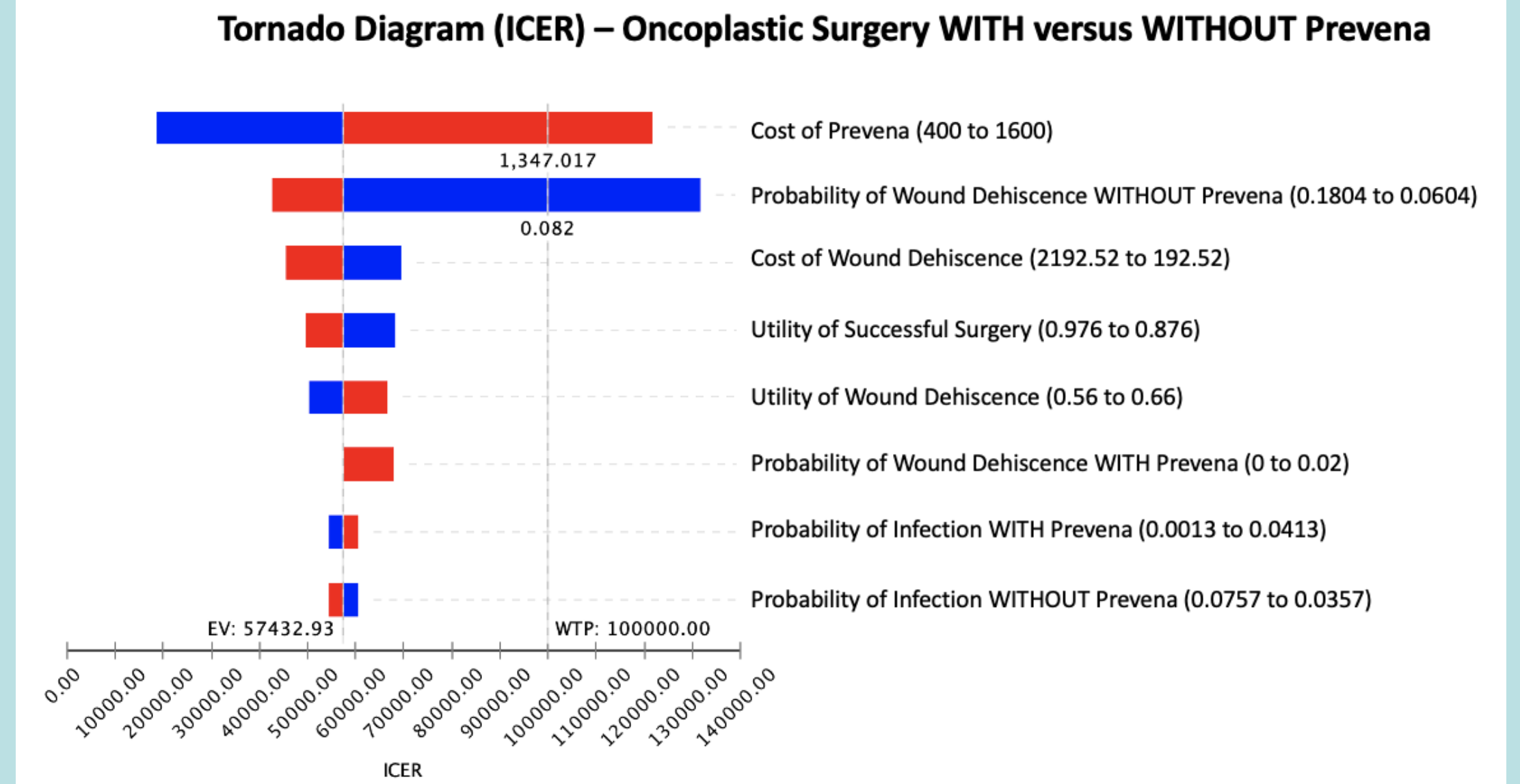


Figure 2B. One-way Sensitivity Analysis. At WTP of \$100,000, Oncoplastic Breast Surgery with Prevena remains the more cost-effective strategy if the probability of wound dehiscence without Prevena is less than 8.2%.

Results

Figure 3. Tornado Diagram (ICER) identifying the greatest variable of uncertainty as the cost of ciNPT.



Conclusions

- Despite the added cost, surgery with **ciNPT is cost-effective**
- This finding is a direct result of decreased overall wound complications with ciNPT

References

- Wareham CM, Karamchandani MM, Ku GC, et al. Closed Incision Negative Pressure Therapy in Oncoplastic Breast Surgery: A Comparison of Outcomes. *Plast Reconstr Surg Glob Open.* 2023 Apr 25;11(4):e4936. doi: 10.1097/GOX.0000000000004936. PMID: 37113306; PMCID: PMC10129093.
- Ockerman KM, Bryan J, Wiesemann G, et al. Closed Incision Negative Pressure Therapy in Oncoplastic Surgery Prevents Delays to Adjuvant Therapy. *Plast Reconstr Surg Glob Open.* 2023 May 26;11(5):e5028. doi: 10.1097/GOX.0000000000005028. PMID: 37250834; PMCID: PMC10219713.