

Budget Consequences of Five Benign Prostatic Hyperplasia Treatment Options – US Medicare Perspective

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OBJECTIVES

- Lower urinary tract symptoms due to benign prostatic hyperplasia (LUTS/BPH) is a highly prevalent condition costing Medicare and private insurers more than \$1.9 billion/year.¹
- This study examined the budget impact of five treatment options for the treatment of moderate-to-severe LUTS/BPH:
 - Generic combination therapy (CT) of Tamsulosin and Dutasteride
 - Water vapor thermal therapy (WVTT)
 - Prostatic urethral lift (PUL)
 - Photoselective vaporization of the prostate (PVP)
 - Transurethral resection of the prostate (TURP)

METHODS

- An Excel-based budget impact model (**Figure 1**) was developed to quantify the financial consequences of CT, WVTT, PUL, PVP, and TURP from a US Medicare perspective, using time horizons of 1 and 5 years.
- Men with a mean age of 63 and an average International Prostate Symptom Score (IPSS) of 22 were assigned to one of the five treatments.
- At each model cycle, patients could either experience LUTS-related adverse events, require retreatment, or receive follow-up care.
- Clinical inputs were obtained from a systematic literature review of randomized and non-randomized clinical trials that reported changes in IPSS and retreatment rates for men with LUTS/BPH and a prostate volume ≤ 80 cm³.
- A random-effects network meta-analysis (NMA) was used to account for the differences in baseline clinical characteristics between trials.
- Procedural, adverse event, retreatment, and follow-up care costs were based on 2022 Medicare reimbursement rates, which include a combination of facility and non-facility fees.²
- To calculate the total budget impact to Medicare, it was assumed there to be 450,000 men newly diagnosed with BPH annually and that 3% of men would switch from more expensive treatments to the least expensive treatment option.

RESULTS

Systematic Literature Review and NMA Results

- The literature search identified 3,014 abstracts, of which 2,777 abstracts did not meet the inclusion criteria.
- Of the 237 full-text publications reviewed, 20 publications were included in the NMA: 15 of which reported IPSS change while 5 reported 1-year retreatment.

Figure 1. Model Patient Flow

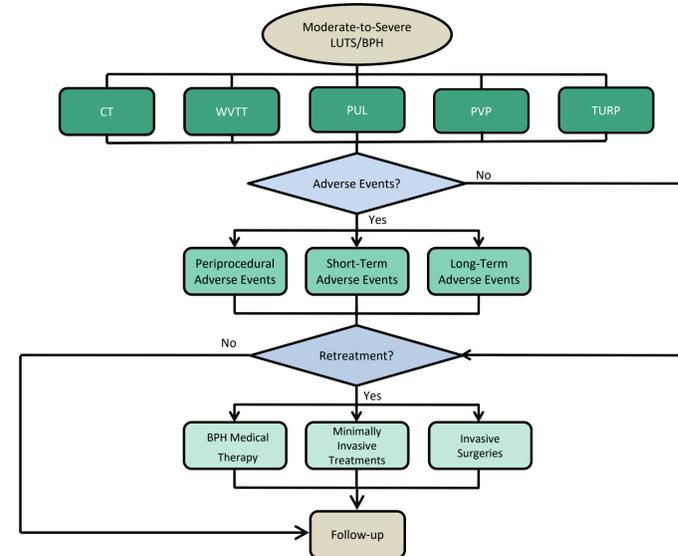
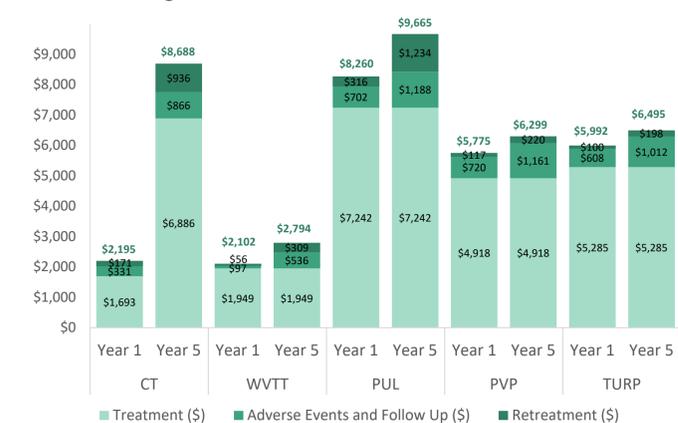


Figure 2. Medicare Costs at Years 1 and 5

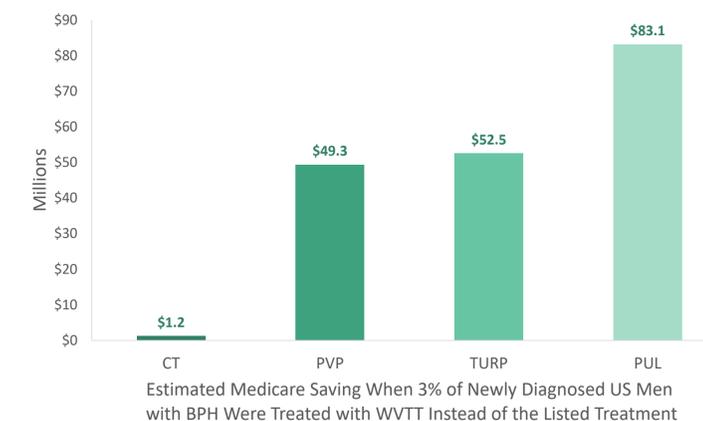


- At 1 year, men with BPH with a mean age of 63 years and a baseline IPSS score of 22 treated with invasive surgical procedures experienced the greatest IPSS improvement ($-\Delta 14.1$ for TURP and $-\Delta 13.8$ for PVP).
- Among non-invasive treatments, WVTT led to the greatest 1-year IPSS improvement ($-\Delta 11.7$), while the IPSS improvements for PUL and CT were similar ($-\Delta 10.4$ vs $-\Delta 10.3$).
- PUL was associated with the highest 1-year retreatment rate of 8.0% compared with PVP (7.8%), TURP (6.3%), CT (3.6%), and WVTT (3.0%).

Budget Consequences Results

- Total Medicare costs (**Figure 2**) at year 1 were highest for PUL (\$8,260) and lowest for WVTT (\$2,102). At year 5, total Medicare costs for PUL remained the highest (\$9,665), followed by CT (\$8,688), TURP (\$6,495), PVP (\$6,299), and WVTT (\$2,794).
 - If 3% of newly diagnosed US men with BPH were treated with WVTT instead of the other treatment options, the annual Medicare spending at 1 year was reduced by \$1.2 million when shifting men from CT to WVTT and \$83 million when shifting men from PUL to WVTT (**Figure 3**).

Figure 3. Estimated Medicare Savings When Shifting 3% of Newly Diagnosed US Men from the Treatment Listed in the Figure to WVTT



STRENGTHS AND LIMITATIONS

Strengths

- This study employed an NMA that provided clinical insights for the five treatment options for men with BPH in the absence of head-to-head clinical trials.

Limitations

- Some clinical inputs were obtained from controlled trials. Patient characteristics in the trials may differ from those in real-world practice, potentially impacting the results of this study.

CONCLUSIONS

- This study provides evidence of the financial consequences of five common treatment options for men with BPH.
- WVTT is a cost-saving treatment option that should be considered in resource-constrained environments.

REFERENCES

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