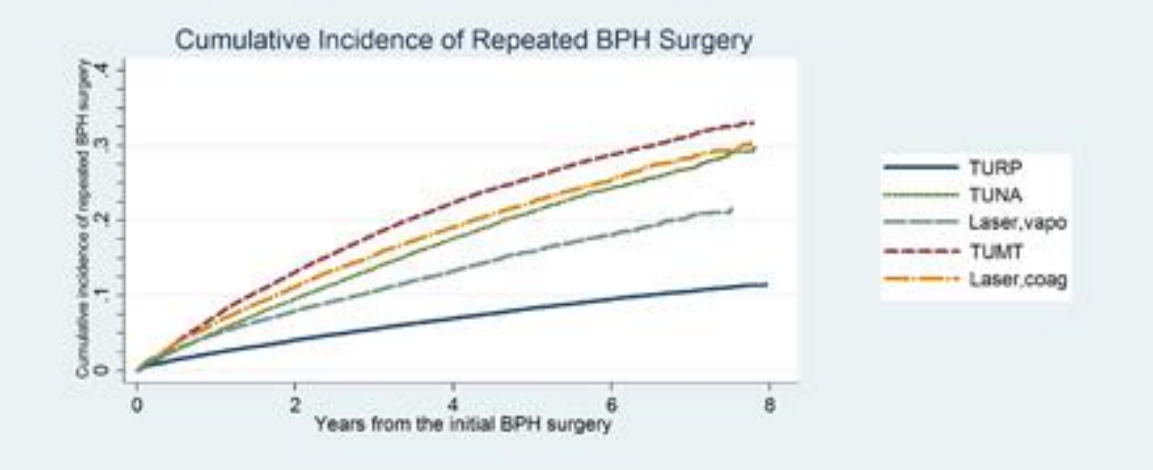
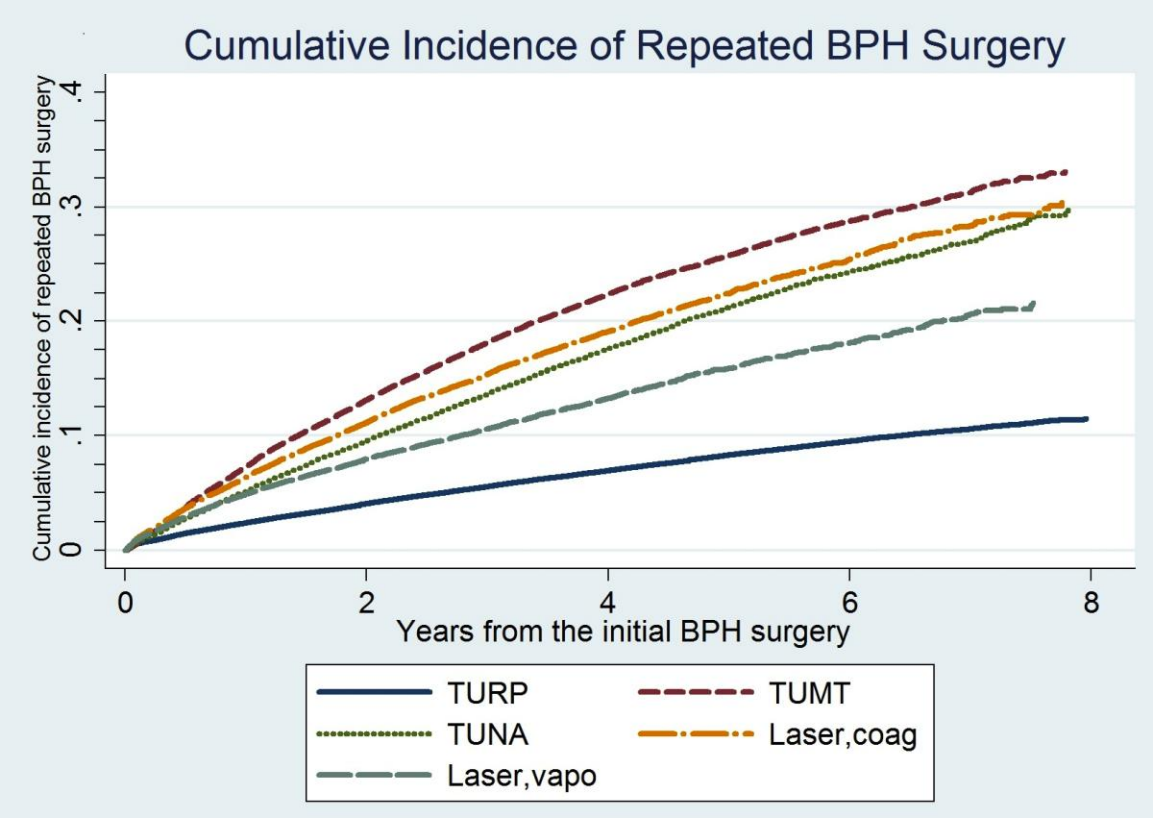
Comparative Effectiveness of Surgical Therapies for Benign Prostatic Hyperplasia

Introduction and Objective: There has been a rapid rise in the use of minimally invasive surgical therapies for benign prostatic hyperplasia (BPH) in the last decade. Transurethral resection of the prostate (TURP) remains the gold standard, but is now used in a minority of cases. By investigating complications and retreatment rates we compared the effectiveness of transurethral resection of the prostate (TURP) to transurethral microwave therapy (TUMT), transurethral needle ablation (TUNA), laser vaporization and laser coagulation of the prostate.
Materials and Methods: Using 100% Medicare files from 2000 through 2008 we identified claims for the above listed BPH surgeries. Age, race, income and education level by zip code, and year of surgery were documented for each procedure. We compared the frequency of claims for treatment of surgical complications using chi square analysis, and the incidence and adjusted hazard ratio for repeat BPH surgery of any type.
Results: There were 629,314 patients included with a mean follow-up of 3.6 years. The most common complication was urethral stricture in 6.1%, 2.3%, and 2.7% of patients undergoing TURP, TUNA, and TUMT, respectively. Bladder neck contracture occurred at a rate of 2.7%, and <1% for TURP and TUNA respectively. The 5-year Kaplan-Meyer estimates for repeat BPH surgery ranged from 8.3% after TURP to 25.8% after TUMT (HR=3.52, CI 3.46-3.59) (see Figure).
Conclusion: TURP has a slightly increased risk of complications including urethral stricture and bladder neck contracture but a dramatically lower risk of repeat BPH surgery compared to other treatments.




Cumulative Incidence of Repeated BPH Surgery
Cumulative incidence of repeated BPH surgery
0
.1
.2
.3
.4
0
2
4
6
8
Years from the initial BPH surgery
TURP
TUMT
TUNA
Laser,coag
Laser,vapo