

Cost Savings Achieved through Introduction of Holmium Laser Enucleation of the Prostate (HOLEP)

Jacob Rust MS4
USF MCOM- LVHN, Jacob.Rust@lvhn.org

James Johannes MD
Lehigh Valley Health Network, James_R.Johannes@lvhn.org

Benjamin Croll MS4
USF MCOM- LVHN, Benjamin.Croll@lvhn.org

Rohan Shah MS4
Rohan.Shah@lvhn.org

Andrew Lai MD

Follow this and additional works at: <https://scholarlyworks.lvhn.org/select-program>



Part of the [Medical Education Commons](#)

Let us know how access to this document benefits you

Published In/Presented At

Rust, J. Johannes, J. Croll, B. Shah, R. Lai, A. (2019, March). *Cost Savings Achieved through Introduction of Holmium Laser Enucleation of the Prostate (HOLEP)*. Poster Presented at: 2019 SELECT Capstone Posters and Presentations Day. Kasych Family Pavilion, Lehigh Valley Health Network, Allentown, PA.

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact LibraryServices@lvhn.org.

Cost Savings Achieved through Introduction of Holmium Laser Enucleation of the Prostate (HoLEP)

Jacob Rust MS4; James Johannes, MD; Benjamin J Croll, MS4; Rohan Shah, MS4; Andrew Lai, MD

Lehigh Valley Health Network, Allentown, Pennsylvania

Background

Benign Prostatic Hyperplasia (BPH)

- ↑incidence and prevalence worldwide
- 80% of men will experience BPH by their 8th decade of life
- ↑risk of mortality, depression, falls
- ↓health-related quality-of-life
- billions of \$\$\$ in annual health expenditures
- When medical management fails, surgical treatment is warranted

Problem Statement

The objective of this study is to compare B TURP and same-day HoLEP with respect to LOS as a source of cost savings in a community hospital setting

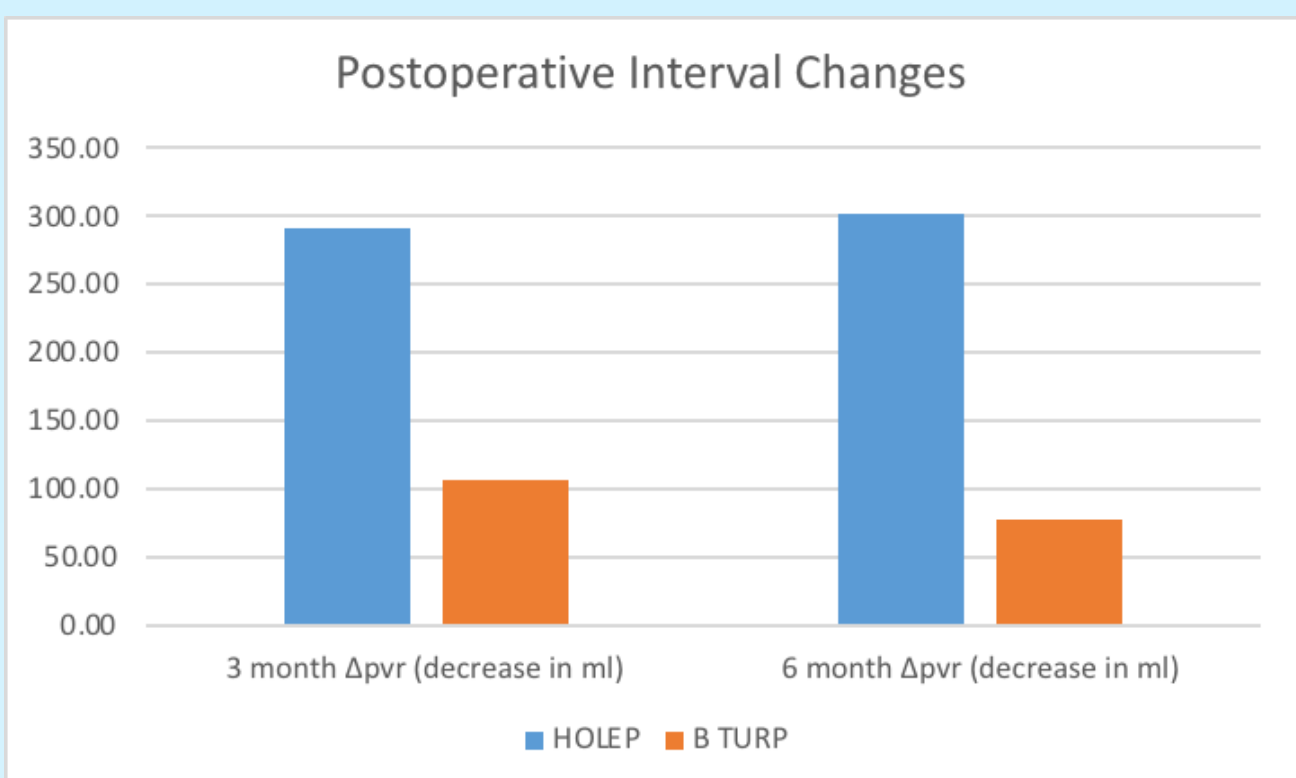
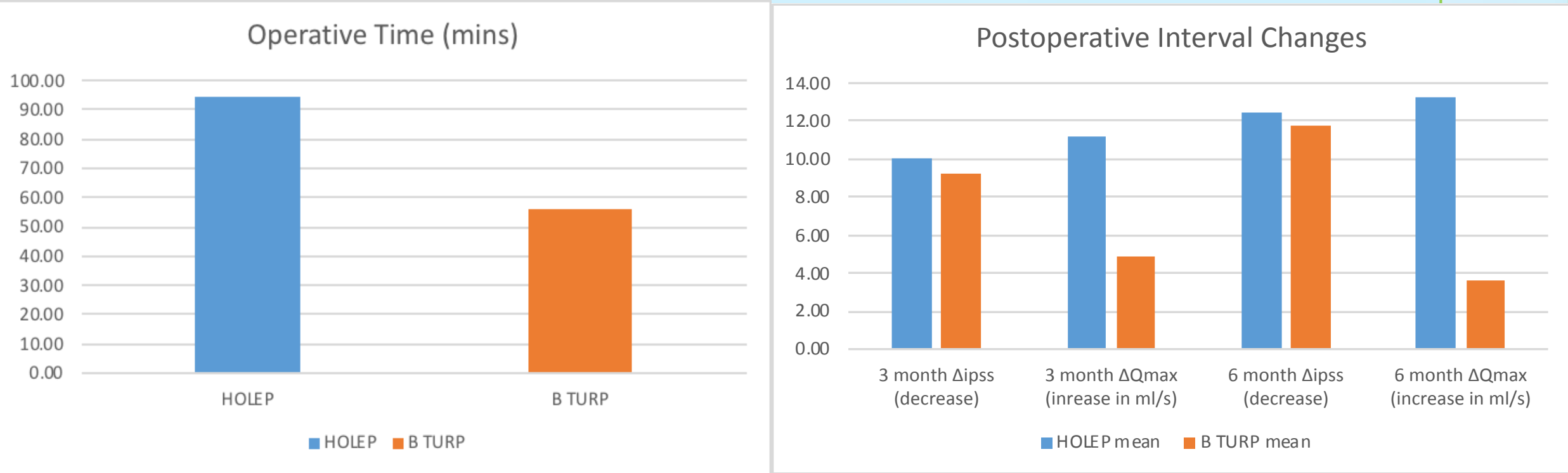
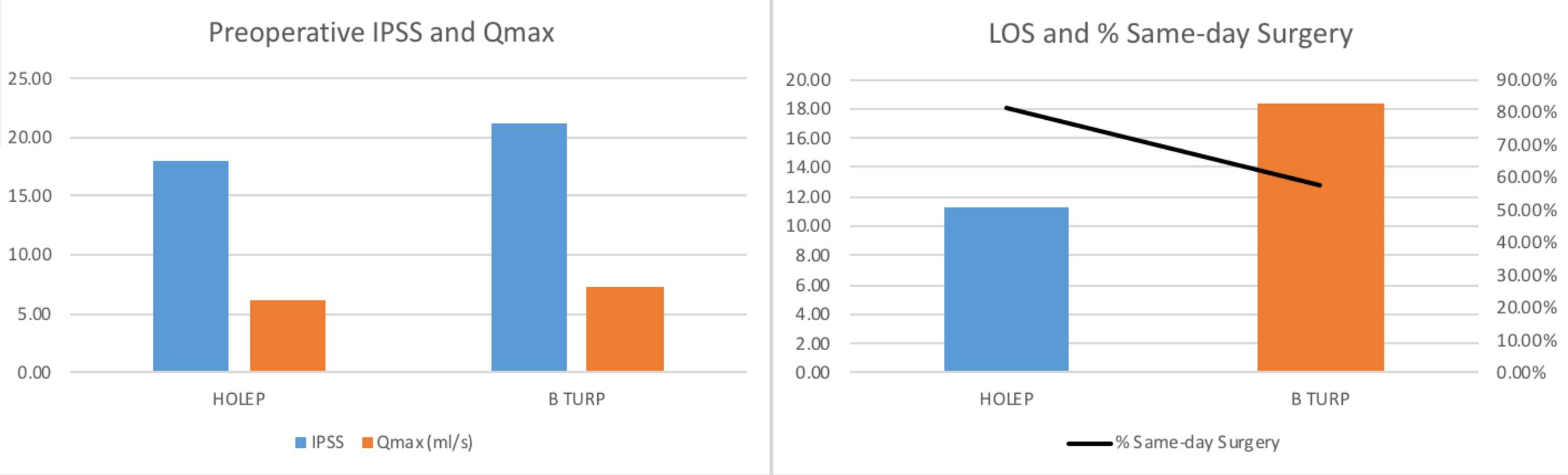
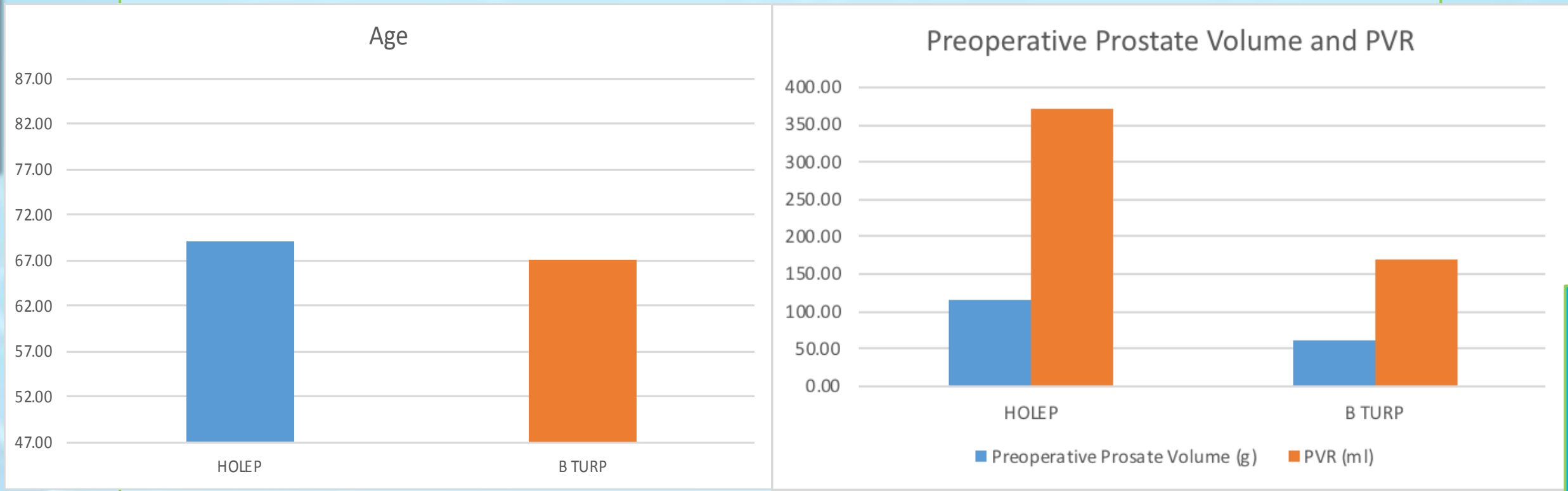
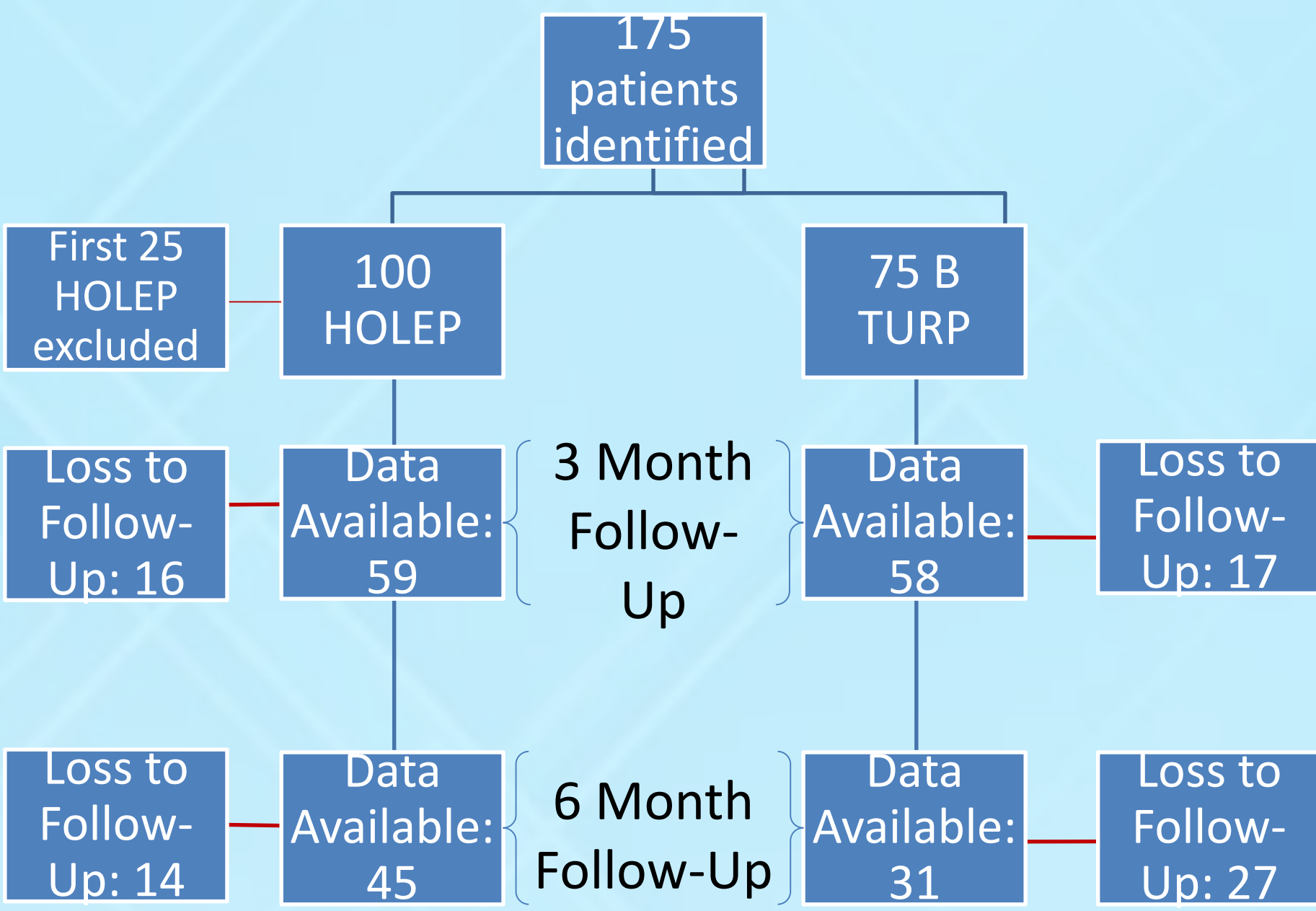
Methods

- Retrospective cohort study
- First 25 HoLEP patients excluded to account for steep learning curve⁹
- 75 consecutive patients from both HoLEP and B TURP providers
- HoLEP performed by a single surgeon vs B TURP performed by a separate single surgeon 11/2015-5/2018
- Both cohorts followed the same postoperative critical care pathway
- Mean LOS, operative time, preoperative prostate volume, postoperative change in IPSS, Q_{max}, PVR at 3 and 6 month intervals
 - Q_{max} values when PVR was <125ml were excluded

Results

Demographics:

- 150 participants
- 100% male



Discussion

- Both 3 and 6 month postoperative data support outcomes in current literature that HoLEP is at worst non inferior to B TURP
 - Despite significantly larger preoperative prostate size
- Significantly shorter length of stay for HoLEP patients provides means to achieve lower cost of hospitalization for BPH surgical candidates
- HoLEP remains an initially expensive addition to Urology program
 - High startup costs, learning curve
- Equates the cost of open simple prostatectomy within 2 years of implementation, conservative management within 2.5 years
 - Significant cost reduction should be anticipated beyond these equivalence points
 - Laser can be used in additional cases (lithotripsy)
- BPH will continue to frequently require urologic care
- According to AUA and EUA guidelines, HoLEP is now established as a treatment for BPH, rather than an emerging technology
- HoLEP has proved to be effective in treating small and large prostates with minimal morbidity, better hemostasis, less blood loss, and better voiding pattern than B TURP
- The upcoming challenge is to optimize patient stratification, assessing which technique should be preferred based on patient characteristics

Conclusions

- HoLEP has the potential for cost savings by reducing the cost of hospitalization for patients undergoing surgical management of BPH
- Same day HoLEP does not sacrifice postoperative outcomes
- Future studies should include
 - Larger sample size
 - Extended follow up of patients beyond 3-6 months
 - More detailed cost analysis between modalities

REFERENCES

1. Patel ND, Parsons JK. Epidemiology and etiology of benign prostatic hyperplasia and bladder outlet obstruction. Indian J Urol. 2014;30(2):170-6.
2. Blom JH, Schröder FH. [Epidemiology and natural course of benign prostatic hyperplasia]. Urologe A. 1992;31(3):129-34.
3. Cornu JN, Ahyai S, Bachmann A, de la Rosette J, Gilling P, Gratzke C, McVary K, Novara G, Woo H, Madersbacher S. A systematic review and meta-analysis of functional outcomes and complications following transurethral procedures for lower urinary tract symptoms resulting from benign prostatic obstruction: an update. Eur Urol. 2015;67:1086-1096.
4. Van der Meulen M, Gilling PJ. In 2013, holmium laser enucleation of the prostate (HoLEP) may be the new 'gold standard'. Curr Urol Rep. 2012;13(6):427-32.
5. Comat V, Marquette T, Suter W, et al. Day-Case Holmium Laser Enucleation of the Prostate: Prospective Evaluation of 90 Consecutive Cases. J Endourol. 2017;31(10):1056-1061.
6. Marien T, Kadihasanoglu M, Miller NL. Holmium laser enucleation of the prostate: patient selection and perspectives. Res Rep Urol. 2016;8:181-192.
7. Haraguchi T, Takenaka A, Yamazaki T, et al. The relationship between the reproducibility of holmium laser enucleation of the prostate and prostate size over the learning curve. Prostate Cancer Prostatic Dis. 2009;12:281-4.
8. Hsu YC, Lin YH, Chou CY, et al. Economic Evaluation Study (Cheer Compliant) Laser Prostatectomy for Benign Prostatic Hyperplasia: Outcomes and Cost-effectiveness. Medicine (Baltimore). 2016;95(5):e2644.
9. Kampantais S, Dimopoulos P, Tasleem A, Acher P, Gordon K, Young A. Assessing the Learning Curve of Holmium Laser Enucleation of Prostate (HoLEP): A Systematic Review. Urology. 2018;120:9-22.
10. Lee MH, Yang HJ, Kim DS, et al. Holmium laser enucleation of the prostate is effective in the treatment of symptomatic benign prostatic hyperplasia of any size including a small prostate. Korean J Urol. 2014;55:737-41.
11. McVary KT, Roehrborn CG, Avins AL, et al. Update on AUA guideline on the management of benign prostatic hyperplasia. J Urol. 2011;185:1793-803.
12. Elshah AM, Mekawy R, Laymon M, et al. Holmium laser enucleation of the prostate for treatment for large-sized benign prostate hyperplasia: is it a realistic endourologic alternative in developing country? World J Urol. 2016;34:399-405.
13. Gill BC, Ulricher JC. Costs of Managing Benign Prostatic Hyperplasia in the Office and Operating Room. Curr Urol Rep. 2016;19(5):72.