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INTRODUCTION

Cystoscopies are a common and high-volume procedure. While much is understood related to these procedures, associated costs can vary greatly and may be dependent on several factors including setting, locality, and annual procedural volume. While studies have aimed to address the differences related to some of these variables, total costs are still not widely understood. The purpose of this study is to review current literature to better understand the per-use cost of a cystoscopy, regardless of the aforementioned variables, with a reusable cystoscope in the United States (U.S.).

OBJECTIVE

The primary objective of this study was to identify the per-use cost to perform cystoscopy in the U.S. from literature published within the last 5 years.

**References:

Assmus, M. A., Krambeck, A. E., Lee, M. S., Agarwal, D. K., Mellon, M., Rivera, M. E., & Large, T. (2022). Cost-effectiveness of 90-day single-use Flexible cystoscope trial: Single center micro-costing analysis and User Satisfaction. Urology, 167, 61-66. https://doi.org/10.1016/j.urology.2022.05.039 Beebe, S. C., Jenkins, L. C., Posid, T., Knudsen, B. E., & Sourial, M. W. (2020). Single-use grasper integrated flexible cystoscope for stent removal: A micro-costing analysis-based comparison. Journal of Endourology, 34(8), 816-820. https://doi.org/10.1089/end.2020.0144 Kenigsberg, A. P., Gold, S., Grant, L., & Lotan, Y. (2021). The economics of Cystoscopy: A Microcost analysis. Urology, 157, 29-34. https://doi.org/10.1016/j.urology.2021.05.008 Su, Z. T., Huang, M. M., Matlaga, B. R., Hutfless, S., & Koo, K. (2021). A micro-costing analysis of outpatient flexible cystoscopes. World Journal of Urology, 39(11), 4275-4281. https://doi.org/10.1007/s00345-021-03724-3 Young, J. A., Garden, E. B., Al-Alao, O., Deoraj, D., Small, A. C., Hruby, G., Grotas, A. B., & Palese, M. A. (2021). Disposable versus reusable cystoscopes: A micro-costing value analysis in high-volume urology practices. Urology Practice, 8(4), 466-471. https://doi.org/10.1097/upj.0000000000000236

METHODS

• PubMed and Google Scholar databases were searched for published literature between Jan. 1, 2017, and Oct. 1, 2022

 Searchtermsincluded"(cost)AND(cystoscopy)" and "((cost)AND(cystoscopy))AND ((disposable) OR (single-use))"

• Title and abstract screenings were performed for relevance and to check for duplicity in articles

• Study locations were reviewed to remove those conducted outside of the U.S. • Article review and removal process can be found in **Figure 1**.

• The costs per use for reusable cystoscopy identified in each article were averaged to arrive at the average cost per use for reusable cystoscopy in the U.S.

• When multiple cost scenarios were published in an article, an average of the scenarios was included in this study

• The average total finding for reusable cost per use was calculated with and without Young et al. given the suspicious values provided specifically related to reprocessing (\$5-\$10 per case excluding wages)





RESULTS

- abstract reviews
- and abstract reviews
- system ranged from \$178.28-\$185.53
- Results from the included studies can be found in **Table 1**.

Table 1**

Study	Assmus et al.	Su et al.*	Kenigsberg et al.	Beebe et al.	Young et al.*	Avg. Total	Avg. Excluding Young
No. Cystoscopes	10	17.5 (10-15)^	9	1	5.5 (2-9) [^]	8.1	9
No. Procedures	140	2000 (1000-3000)^	3739	871	1114.5 (245-1984)^	1496.5	1688
Procedure per Cystoscope	14	114 (40-300)^	415	871	203 (123-220)^	293	354
Reprocessing Cost per Use	\$70.87	\$48.87	\$39.57	\$117.28	\$124.02 ⁺ (\$36.11-\$211.94)^	\$87.44	\$69.15
Total Reusable Cost per Use	\$272.41	\$147.25 (\$105.46-\$224.35)^	\$160.60	\$161.85	\$149.30 (\$65.98-\$232.62)^	\$178.28	\$185.53

* Given the variance in procedural and scope volume, an average of presented scenarios was used ^ Range based on scenarios published

⁺Reprocessing costs includes the labor costs for the medical assistant

LIMITATIONS

Costs may vary by facility and facility type and only those reported in the literature were included. In addition, costs for reprocessing may be higher than reported at the time of the studies included in this analysis given updated reprocessing guidelines, including those by AAMI and AORN which include additional necessary reprocessing steps. Lastly, this study excluded costs findings from Young et al. given that the values appear to be erroneous when compared to the literature and subject-matter expertise.

CONCLUSION

U.S.-based literature published between Jan. 1, 2017, and Oct. 1, 2022 identified the average total cost per use to perform a cystoscopy with a reusable cystoscope to be between \$178.28 and **\$185.53**. Generally, the cost per use for reusable cystoscopy decreases as annual procedure volume grows larger as seen in **Table 1**. This may be offset by large reusable cystoscope inventory at high volume centers. As reprocessing guidelines grow more robust with additional steps and capital, facilities need to understand how their total costs and workflow efficiencies may be impacted.

• PubMed database search returned 137 articles; 130 of which were excluded based on title, location, and

• Google Scholar database search returned 436 articles, 421 of which were excluded based on title, location,

• Reviewing for duplicity between the remaining articles removed 17 of the 22 articles (see Figure 1) • The average cost to perform cystoscopy with reusable flexible cystoscopes in the United States healthcare

• The average cost of reprocessing per use for reusable cystoscopes ranged from \$69.15-\$87.44



Single-use cystoscopes may provide a solution for facilities who are experiencing high costs and reprocessing turnaround time for reusable cystoscopy.