

# Cost Estimation of Commonly Used Disposables During Ureteroscopy



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## Background

- Cost awareness is essential for cost containment.<sup>1</sup>
- Surgeons play a significant role in selecting supplies in the operating room (OR) and their decisions impact cost containment.<sup>1</sup>
- Research across surgical specialties suggests that surgeon awareness of surgical supply cost is lacking.<sup>2,3</sup>
- In general, surgeons are highly inaccurate at estimating the cost of OR supply items and tend to overestimate cost.<sup>2,3</sup>

## Objective

- To evaluate the ability of urology faculty, fellows, residents, and their OR staff to estimate the cost of 10 common disposable items used in ureteroscopy, and to identify potential motives for cost reduction.

## Methods

- An anonymous survey was emailed to 110 urologic surgeons, trainees, and OR staff at two different academic institutions.
- The 26-question survey comprised of 6 demographic questions, 10 regarding attitudes and beliefs around cost awareness of disposables, and cost estimates of 10 common disposables.
- A cost estimate was considered accurate if it fell within 20% of the actual institutional cost.

- The overall response rate was 69% (n=76) details shown in Table 1.

**Table 1: Response rate**

Respondent	Response Rate %
Faculty	61% (22/36)
Trainees	75% (22/29)
OR Staff	71%(32/45)
Total	69% (76/110)

- Of 760 cost estimations (76 respondents x 10 items), 21% were accurate. About 65% of estimations were overestimations from actual cost, and the mean percentage error (MPE) was 263% (SD 436%) (Figure 1).
- Attending urologists had an MPE of 252% (SD 390%), trainees had an MPE of 174% (SD 194%), and OR staff had an MPE of 332% (SD 558%) (p<.001).
- Trainees generally had the lowest median cost estimates per item, while OR staff had the highest (Figure 2).

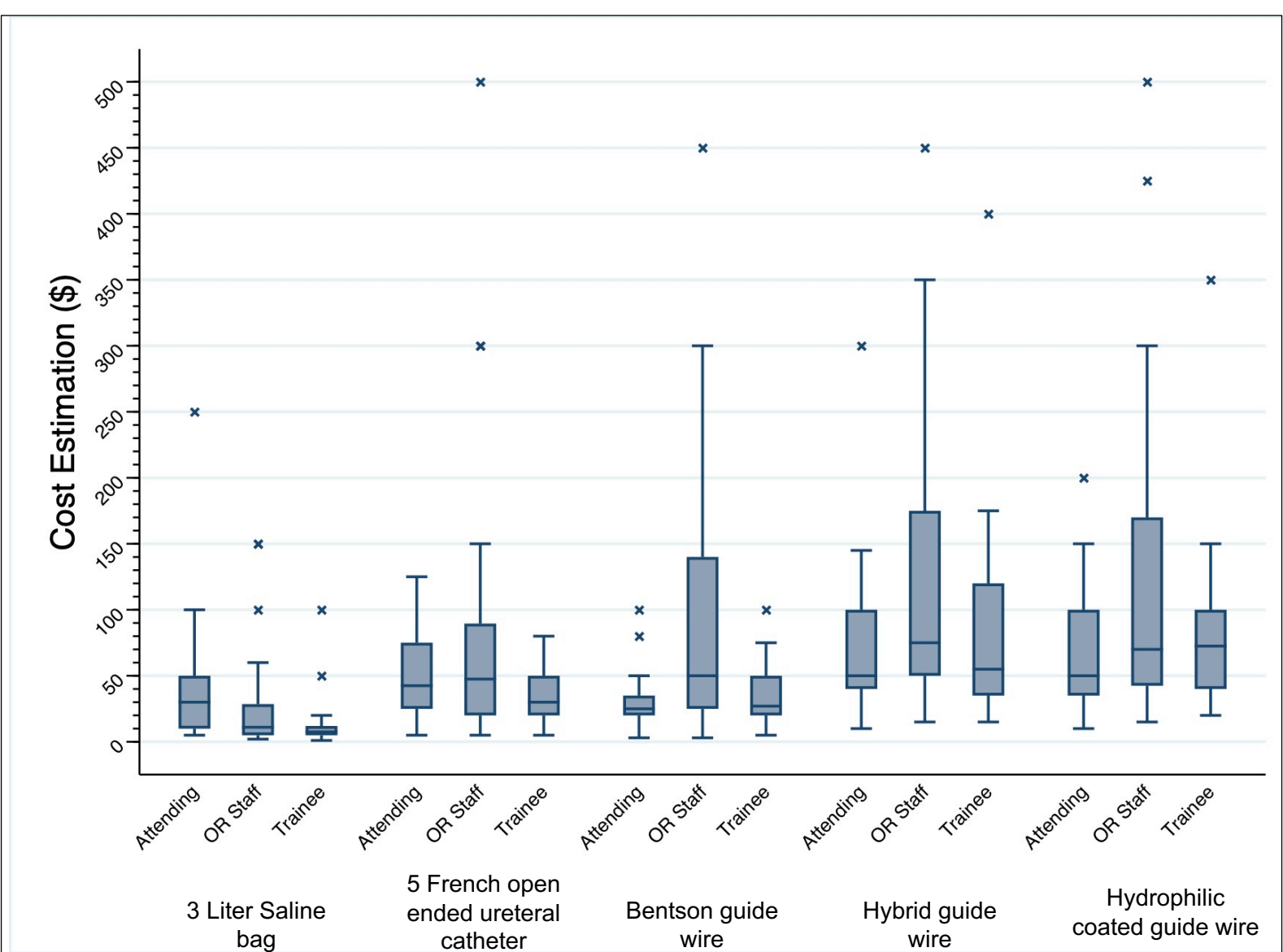


Figure 2. Overall cost estimates for 5 of the 10 common items, stratified by respondent. Disposables are organized from least to most expensive. Remaining 5 items not shown.

- Of 76 respondents, 75% believed that there is “far too little” or “too little” emphasis placed on ureteroscopy cost awareness.
- Of 76 respondent, 46% favored having more knowledge of costs while 50% favored incentives, such as new equipment or bonuses as motivators to decrease disposable ureteroscopy costs.

## Results

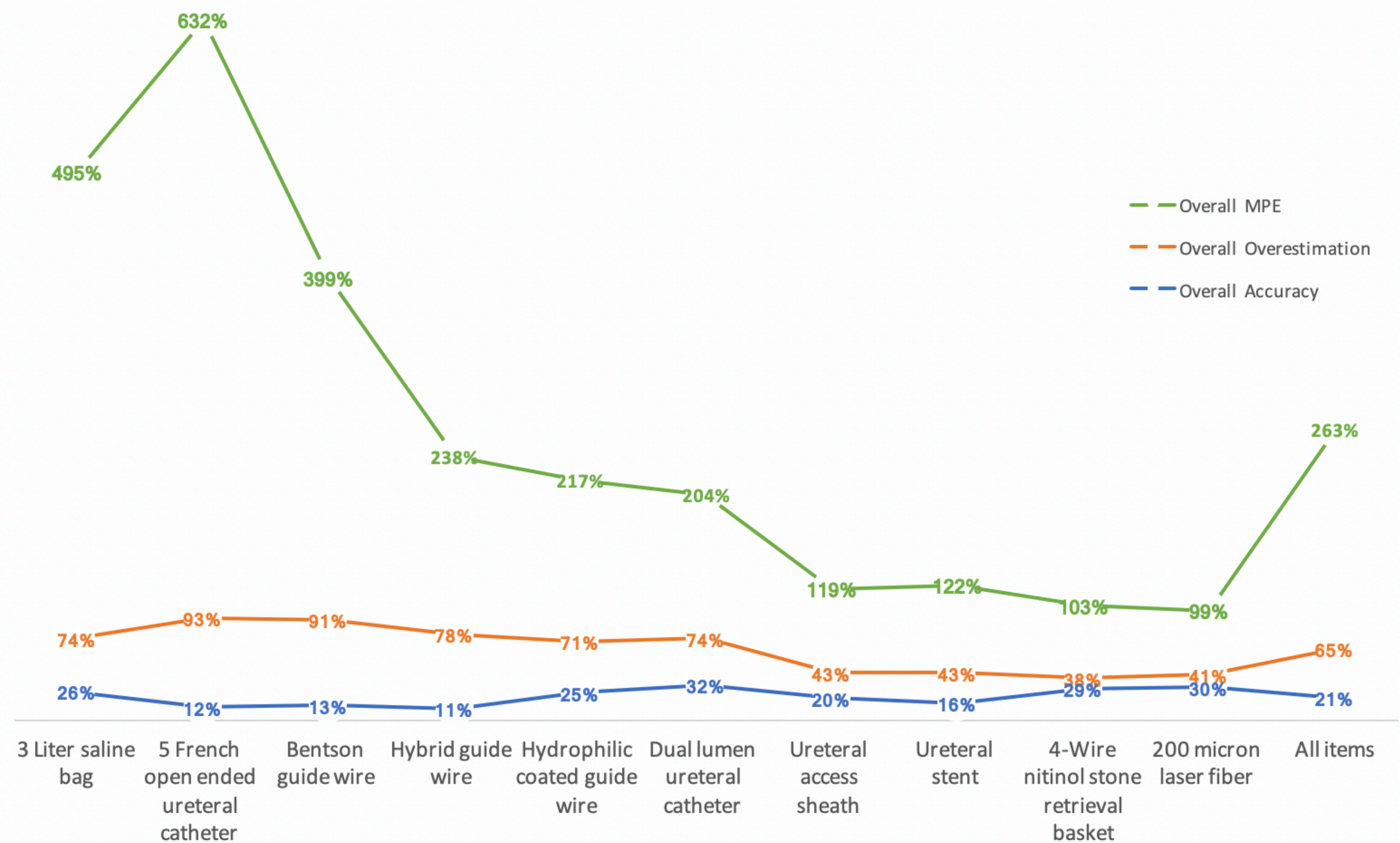


Figure 1. Overall % accuracy, % overestimation, and mean percentage error (MPE) for each disposable item (n=76 per column, except “All items,” where n=760). Disposables are organized from least to most expensive. **Blue** represents accuracy of estimates within 20% of actual cost, **orange** represents overestimation above actual cost, and **green** represents MPE, which is the relative cost to actual cost, where 100% indicates actual cost.

## Conclusions

- Among urology faculty, trainees, and OR staff, cost estimation of common disposables in ureteroscopy is highly inaccurate and mostly overestimated.
- Cost awareness is not emphasized well at either institution.
- The majority of respondents favored either cost education or an incentives program to help reduce disposable costs in ureteroscopy.

## References

1. Schmidt B, Meng MV, Hampson LA. Operating Room Supply Cost Awareness: A Cross-Sectional Analysis. *Urol Pract.* 2019;6(2):73-8.
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