

between these 2 goals. While residents were PGY 4/5, we were not able to determine exactly which resident did which portions of the procedure. On some days, multiple residents were present and the operative notes did not detail the portions of the procedure done by the resident/s or the attending physician. Finally, although this study includes 1 year follow-up of functional outcomes, future studies may be strengthened by the inclusion of a longer follow-up period.

## CONCLUSIONS

Academic urologists have a responsibility to ensure that the quality of medical care stays high while at the same time offering training that will equip the next generation of urologists with the skills they need to succeed in an ever advancing surgical arena. These results suggest that neither clinicians nor patients undergoing RALP should be alarmed by the involvement of a resident as neither safety nor quality is diminished by resident involvement in RALP procedures.

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## EDITORIAL COMMENT

This retrospective study by Baber et al<sup>1</sup> analyzed 460 robotic assisted laparoscopic radical prostatectomies (RALP) to examine the effect of resident involvement in the procedure on operative time, complications, as well as patient functional and oncologic outcomes. All cases were performed by a single attending surgeon between 2007 and 2016. Residents underwent graduated robotic training, including a step-wise progression of tasks according to degree of difficulty. Not surprisingly, operative and robotic time increased with resident involvement compared to cases with only an attending surgeon. However, there was no difference in postoperative complication rates and functional/oncologic outcomes between resident and nonresident cases.

Treatment at an academic facility presents an innate tension: while it is important to provide high-quality patient care and reasonable operative efficiency, it is equally imperative to allow for training of residents. Without adequate training of residents today, attending surgeons in the future will not be able to provide high-quality care. Thus, within the realm of academic surgery, patient safety, and efficiency must be balanced with resident training. RALP is a reasonable model to assess this issue as it is commonly performed procedure in both the community and academic setting. As a result, most residents participate (at least in part) in >100 RALPs during their training and many will be expected to perform a RALP following graduation. While previous studies have shown that resident involvement in RALPs does not increase the complication rate or diminish functional outcomes,<sup>2,3</sup> few studies have examined long-term oncologic outcomes. Patients in this study were followed 90 days for postoperative complications, 1 year for functional outcomes, and a median 30 and 33.5 months for oncologic outcomes for non-resident and resident cases, respectively. The lack of significant long-term differences (biochemical recurrence/positive surgical margins) between attending only and resident cases adds additional support to resident involvement in RALPs.

Despite numerous studies, including a meta-analysis of 40,000 urologic surgeries suggesting that resident involvement does not endanger patients,<sup>4</sup> operative time is generally increased across urologic procedures with resident involvement.<sup>3,5,6</sup> The authors noted that there was a significant increase in operative time between the first and last 4 years of the study, speculating that this effect was due to increased resident involvement in RALPs in more recent years. Schommer et al<sup>7</sup> found that resident's robotic skills significantly increased between 2012 and 2015, which is a result of increased utilization of robotic surgery. An analysis of surgical flow disruptions in urologic robotic surgeries showed that while resident participation increased the amount of disruptions, the majority of disruptions in resident cases were for training purposes.<sup>8</sup>



Being cognizant of the demands for operative time, a core mission of academic urology is the training of residents to become competent urologic surgeons and operative experience is irreplaceable in the development of surgical competency. Limitations of the current study notwithstanding, it provides further evidence that operative time is likely the only significant detractor of involving residents in robotic procedures. In light of the data supporting the safety of resident involvement in surgery and the necessity of experience, residents should continue to participate in procedures appropriate for their level of training, with attending intervention reserved for critical portions of the procedure.

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<https://doi.org/10.1016/j.urology.2019.05.041>  
UROLOGY 132: 47–48, 2019. © 2019 Published by Elsevier Inc.