



EDITORIAL COMMENT

8. Quan H, Sundararajan V, Halfon P, et al. Coding algorithms for defining comorbidities in ICD-9-CM and ICD-10 administrative data. *Med Care*. 2005;43:1130–1139.
9. Fang YM, Egan JF, Rombro T, Morris B, Zelop CM. A comparison of reasons for choosing obstetrician/gynecologist subspecialty training. *Conn Med*. 2009;73:165–170.
10. Borman KR, Biester TW, Rhodes RS. Motivations to pursue fellowships are gender neutral. *Arch Surg*. 2010;145:671–678.
11. Lee TT, Klose JL. Survey on neurosurgery subspecialty fellowship training. Congress of Neurological Surgeons Education Committee. *Surg Neurol*. 1999;52:641–644; discussion 644–645.
12. Gast KM, Kuzon Jr. WM, Adelman EE, Waljee JF. Influence of training institution on academic affiliation and productivity among plastic surgery faculty in the United States. *Plast Reconstr Surg*. 2014;134:570–578.
13. Kohn GP, Nikfarjam M. The effect of surgical volume and the provision of residency and fellowship training on complications of major hepatic resection. *J Gastrointest Surg*. 2010;14:1981–1989.
14. Kothari SN, Boyd WC, Lambert PJ, Mathiason MA. Can an advanced laparoscopic fellowship program be established without compromising the center's outcomes? *Surg Innov*. 2008;15:317–320.
15. Arbab S, Jurkovich GJ, Rivara FP, et al. Patient outcomes in academic medical centers: influence of fellowship programs and in-house on-call attending surgeon. *Arch Surg*. 2003;138:47–51. discussion 51.
16. Kohn GP, Galanko JA, Meyers MO, Feins RH, Farrell TM. National trends in esophageal surgery—are outcomes as good as we believe? *J Gastrointest Surg*. 2009;13:1900–1910. discussion 1910–1902.
17. Nayak JG, Drachenberg DE, Mau E, et al. The impact of fellowship training on pathological outcomes following radical prostatectomy: a population based analysis. *BMC Urol*. 2014;14:82.
18. Taylor AS, Lee B, Rawal B, Thiel DD. Impact of fellowship training on robotic-assisted laparoscopic partial nephrectomy: benchmarking perioperative safety and outcomes. *J Robot Surg*. 2015;9:125–130.
19. Thiel DD, Hutchinson R, Diehl N, Tavlarides A, Williams A, Parker AS. Impact of fellowship training on one-year outcomes of robotic-assisted prostatectomy. *JSLs*. 2012;16:195–201.
20. Pardo C, Schott W. Public versus private: evidence on health insurance selection. *Int J Health Care Finance Econ*. 2012;12:39–61.
21. Grunow M, Nuscheler R. Public and private health insurance in Germany: the ignored risk selection problem. *Health Econ*. 2014; 23:670–687.
22. Chen Q, Bagante F, Merath K, et al. Hospital teaching status and medicare expenditures for hepato-pancreato-biliary surgery. *World J Surg*. 2018. <https://doi.org/10.1007/s00268-018-4566-1>.
23. Finkelstein M, Bilal KH, Palese M. A medical application to bridge the gap between clinicians and clinical data. *Stud Health Technol Inform*. 2015;210:681–683.
24. Williams SB, Kacker R, Alemozaffar M, Francisco IS, Mechaber J, Wagner AA. Robotic partial nephrectomy versus laparoscopic partial nephrectomy: a single laparoscopic trained surgeon's experience in the development of a robotic partial nephrectomy program. *World J Urol*. 2013;31:793–798.
25. Lucas SM, Mellon MJ, Ermsberger L, Sundaram CP. A comparison of robotic, laparoscopic and open partial nephrectomy. *JSLs*. 2012; 16:581–587.
26. Alemozaffar M, Chang SL, Kacker R, Sun M, Dewolf WC, Wagner AA. Comparing costs of robotic, laparoscopic, and open partial nephrectomy. *J Endourol*. 2013;27:560–565.
27. Chaste D, Couapel JP, Fardoun T, et al. Robot-assisted partial nephrectomy versus laparoscopic partial nephrectomy: a single institution experience. *Prog Urol*. 2013;23:176–183.
28. Dimick JB, Cowan Jr. JA, Colletti LM, Upchurch Jr. GR. Hospital teaching status and outcomes of complex surgical procedures in the United States. *Arch Surg*. 2004;139:137–141.
29. Paulsen T, Kjaerheim K, Kaern J, Tretli S, Trope C. Improved short-term survival for advanced ovarian, tubal, and peritoneal cancer patients operated at teaching hospitals. *Int J Gynecol Cancer*. 2006;16(Suppl 1):11–17.

Partial nephrectomy (PN) has gradually become the leading surgical treatment for small renal masses over the 2 decades, especially after the dissemination of the robotic platform.¹ Mastering this challenging surgical procedure requires structured training, and a steep learning curve.² The authors of this intriguing study used a state-wide database (SPARCS, New York State) to evaluate the impact of a urologic fellowship on physician case-volume and immediate outcomes of robotic-assisted PN (RAPN), and to assess predictors of undergoing a RAPN by a fellowship-trained urologist. Surgical training in the era of robotic surgery remains matter of debate, as US graduates of urology residency program still perceives lack of confidence in advanced minimally invasive procedures, such as RAPN.³ Previous literature already showed an increasing ability of those surgeons who attended a mini-fellowships and courses.^{4,5} Certainly, a structured fellowship program, such as those offered by the Endourological Society or the Society of Urologic Oncology, can potentially provide exposure to larger surgical volumes and to more complex cases so that the trainees can overcome the learning curve and fill deficiencies that he/she might have experienced during residency.

Few findings of the present study are worth mentioning. Fellowship-trained urologists performed slightly higher number (56% vs 44%) of the total number of procedures done in the 5-year study period (2009–2014), which is probably less than one would expect. Not surprisingly, RAPN done at teaching hospitals was more frequently done by fellowship-trained urologists (23% vs 7%). The average surgical volume per year was also slightly higher for those fellowship trained (9.6 cases vs 7.2 .5 cases), but what strikes the most is that on average those performing RAPN in the state of New York do less than 10 cases a year. In any case, the outcomes were comparable between RAPN done by fellowship trained and those without a fellowship. And these outcomes seem to mirror those of high volume centers.¹ Last, wealthier people were more likely to be treated by fellowship trained. Previous studies demonstrated that more educated and higher wage patients have higher odds to be treated with RAPN in tertiary level hospitals, which tend to be in larger cities.⁶

The main limitation of the present study (as many other based on administrative datasets) is the lack of granular information about tumor characteristics, and surgical data within SPARCS database. One can postulate that more complex cases were done in teaching/larger volume hospitals, and by fellowship-trained urologic surgeons. Notwithstanding these limitations, we would like to congratulate the authors for the present analysis, which can contribute to the ongoing debate, raising some critical points of discussion.

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References

1. Grivas N, Kalampokis N, Larcher A, et al. Robot-assisted versus open partial nephrectomy: comparison of outcomes. A systematic review. *Minerva Urol Nefrol*. 2019. <https://doi.org/10.23736/S0393-2249.19.03391-5>.

2. Omidele OO, Davoudzadeh N, Palese M. Trifecta outcomes to assess learning curve of robotic partial nephrectomy. *JSL.S.* 2018;22. <https://doi.org/10.4293/JSL.S.2017.00064>.
3. Okhunov Z, Safiullah S, Patel R, et al. Evaluation of urology residency training and perceived resident abilities in the United States. *J Surg Educ.* 2019. <https://doi.org/10.1016/j.jsurg.2019.02.002>.
4. Kolla SB, Gamboa AJ, Li R, et al. Impact of a laparoscopic renal surgery mini-fellowship program on postgraduate urologist practice patterns at 3-year follow-up. *J Urol.* 2010;184:2089–2093. <https://doi.org/10.1016/j.juro.2010.06.097>.
5. Altunrende F, Autorino R, Haber GP, et al. Immediate impact of a robotic kidney surgery course on attendees practice patterns. *Int J Med Robot.* 2011;7:165–169. <https://doi.org/10.1002/rcs.384>.
6. Huang WC, Atoria CL, Bjurlin M, et al. Management of small kidney cancers in the new millennium: contemporary trends and outcomes in a population-based cohort. *JAMA Surg.* 2015;150:664–672. <https://doi.org/10.1001/jamasurg.2015.0294>.

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to think further about the utility of fellowship training as they plan out their careers. As more of our procedures move toward minimally invasive approaches, further exposure during a fellowship can be beneficial in helping a surgeon improve skills and garner confidence. However, this must be weighed against the potential financial loss by postponing training completion as well as one's personal preference on what type of practice they want to conduct.

There are 2 aspects of the study that we find noteworthy and wish to reemphasize. First, we report no observable differences in outcomes between urologists with fellowship and those without. Though encouraging, this may not tell the full story as the database lacked information on oncological outcomes and case complexity. Second, the average case-volume for fellowship-trained urologists performing RAPN is increasing over time while rates for those without fellowship are decreasing. We believe this trend is likely to continue due to factors such as patient preference and physician referral patterns to surgeons with additional training in these more complex procedures.

We encourage additional reports on the topic of subspecialization and fellowship training in the urological literature in order to help trainees make the most informed decision possible on whether or not to pursue a fellowship. It is important that, regardless of electing to pursue a fellowship or not, urology residents make a decision that fits their individual career goals.

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AUTHOR REPLY



We would like to thank both the editors and journal for giving us an opportunity to publish our work on the impact of fellowship training on physician case-volume and immediate perioperative outcomes in robotic-assisted partial nephrectomy (RAPN). Perhaps even more important than providing an assessment on the current landscape of urological fellowship training and its impact on both volume and outcomes, our report serves as a conversation starter to encourage urologists