

EDITORIAL

The 10,000 Hour Rule, Robotics and the Evolving Lifespan of a Urologic Career

In his book, *Outliers*, Malcolm Gladwell introduced the concept of the 10,000 hour rule. He argued that to achieve proficiency and skill in most physical endeavors requires 10,000 h of training or practice.¹ However, others have argued that the 10,000 hour rule may be a provocative generalization that is arbitrary and doesn't consider the quality of practice in the 10,000 h.² Nonetheless, from the standpoint of urologic surgery, it takes time-years-to acquire the skill to complete a residency and apply for a fellowship.³ A urology fellowship typically lasts 1–3 years, and that time may be increasing. Training duration appears to be increasing, as a survey of urology chief residents in 2019 revealed that 72% of respondents stated that they were electing to enter a fellowship.³ Whether the 10,000 hour rule is applicable to urology will continue to be debated, but many urologists do not finish their training until their mid-thirties.

Concurrent with the trend of increased years of training is the emerging shortage of urologists. It was estimated in 2019 that there were 4.16 practicing urologists per 100,000 people in the United States and it was predicted that this would decrease to 3.1 by 2035.^{4,5} This trend reflects, in part, the aging of the US population. The consequences of these alarming data are further exacerbated by the acknowledgment that urologic diseases are more common among the elderly. Coupled with this is the marked trend of urologists who report that they are transitioning to a variety of group practice settings as only 5.8% of urologists remain in a solo practice arrangement.⁶ This trend will be softened somewhat by several factors. The reliance on physician assistants has greatly increased in recent years, as 84% of urologists report working with an APP (advanced practice provider).

Over the past two decades, the acceptance of robotics in urologic practice has been dramatic. The incorporation of robotics in urologic surgery has lessened the physical demands on the urologic surgeon. Olcucu et al. have reported a statistically significant decrease in the physical exhaustion rate in urologists performing radical prostatectomy robotically compared to those utilizing open or laparoscopic techniques.⁷ Potentially, robotics could facilitate a lengthening of the urologic practice lifespan.

Unlike some surgical subspecialties, urology provides the practitioner with the opportunity to gradually transition from an inpatient, operative practice to an ambulatory, office-based environment. American Urologic Association data reflect this pattern. Their report documents a distinct trend of a decreasing involvement with MIOPs (major inpatient operative procedures) as urologists age. The data reveal that 88.6% of urologists under age 45 report performing MIOPs compared to only 62.3% over the age of 65. Pruthi has suggested that most surgeons and others in technical trades reach their peak of overall performance in the second half of their forties.⁸ This likely represents the confluence of preservation of physical vigor and mental acuity with experience and judgment.

So where do all these factors leave urologic practice? It appears that the aging of the population with their concomitant urologic maladies will only increase the need for urologic care. Urologic training will also continue to lengthen as fellowship training will become de rigueur.

The reliance on APPs and further incorporation of robotics into operative urology will mitigate some of the physical demands of urologic practice. Finally, the prevalence of larger urology groups will enable older urologists to find their niche in a less physically challenging setting. All of these factors predict that the lifespan of a urologic career may increase, not decrease, in the future. These realities should be considered when forecasting future urologic workforce needs.

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