

We assumed that the survey and questionnaires we looked at were told truthfully and pertained to urology education specifically. In addition, we assumed that the studies had taught urology appropriately and with the same type of education concepts the AUA directs. These assumptions could be over inferred and diverge from the original author's purpose. However, our findings were still consistent with previous studies published, which illustrate that while the need for urologic education continues to increase, the amount of medical school assessments in urology continues to decline.^{2,3,9} Future research in the field can be done by surveying academic urologists and reviewing their curriculum to find out what type of assessments are currently being implemented. In addition, we could survey students to find out what type of urologic education they are taught and test their ability to handle different urologic patients.

There are areas for improvement within urology medical school education. It should first focus on teaching core concepts as this method has proven to be the superior approach for educating students.⁸ The core concepts can be framed from the AUA's medical student core curriculum as this is what graduating medical students should be familiar with according to extensive research done by the AUA.⁵ The Association of American Medical College currently does not have a urologic curriculum listed on their website. We can work with the Association of American Medical College to create a core curriculum that is based off of the AUA's, which may encourage medical schools to implement a urologic curriculum leading to increased exposure in the field. A combination of interactive lectures and modules can be used to teach these core competency subjects while at the same time involving students in clinical practice so that they can experience firsthand what they learn. Surveys from students also reported that they believe patient interaction in the clinic is the most effective way that they are learning.⁷ Being able to talk to patients and actively think about the management of their own patient's urologic problems will help solidify the core concepts. A required urologic rotation would be beneficial to students, even for a short period of time of 1-2 weeks. This of course competes with the many clinical opportunities and requirements in the clinical years of medical school. The trend of offering urology rotation as an elective limits the medical students' exposure and education to a key area of medical education that will likely be part of their future practice, especially if they go into primary care.

CONCLUSION

Analysis of the published literature reveals a paucity of articles investigating implementation and outcomes of formal urologic curricula to medical students. Most of the literature focuses on acquisition of knowledge concerning narrow urology-related topics. Primary care physicians and urologists often receive minimal exposure to formal urologic curricula during their medical school years. In

addition, medical students are reporting few available or encouraged experiences in urology education.¹¹ Implementation and innovation based on available curricula, including the American Urological Association curriculum, and appropriate assessments aimed at increasing medical student familiarity with common urologic scenarios is warranted. The results of this study can inform the efforts of medical schools and urology programs seeking to expand their educational opportunities.

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SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.urology.2018.07.044](https://doi.org/10.1016/j.urology.2018.07.044).

References

1. Patel ND, Parsons JK. Epidemiology and etiology of benign prostatic hyperplasia and bladder outlet obstruction; *Indian J Urol.* 2014;30:170–176. <http://doi.org/10.4103/0970-1591.126900>.
2. Slaughenhaupt B, Ogunyemi O, Giannopoulos M, Sauder C, Levenson G. An update on the current status of medical student urology education in the United States. *Urology.* 2014;84 (Oct):743–747.
3. Teichman JM, Weiss BD, Solomon D. Urological needs assessment for primary care practice: implications for undergraduate medical education. *J Urol.* 1999;161:1282–1285.
4. Loughlin KR. The current status of medical student urological education in the United States. *J Urol.* 2008;179:1087, 90; discussion 1090-1.
5. American Urological Association. Education for medical students; 2017. Available from; 2017. <http://www.auanet.org/education/auauuniversity/medical-student-education>. (accessed January 1, 2018).
6. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol.* 2005;8(1):19–32.
7. Teichman JMH, Monga M, Littlefield JH, Huang WJ. Re: third year medical student attitudes toward learning urology [6]. *J Urol.* 2001;166:1011.
8. Slaughenhaupt BL, Lester RA, Rowe JM, Wollack JA. Design, implementation and evaluation of a new core learning objectives curriculum for a urology clerkship. *J Urol.* 2011;186:1417–1421.
9. Kan KM, Jayadevan R, Rodriguez N, Weissbart S, Stock JA. The current state of urological education for medical students. *Urol Pract.* 2017;4:71–75.
10. Kerfoot BP, Baker H, Volkan K, et al. Development and initial evaluation of a novel urology curriculum for medical students. *J Urol.* 2004;172:278–281.
11. Derbyshire LF, O'Flynn KJ. Medical students' exposure to urology in the undergraduate curriculum, a web based survey. *Br J Med Surg Urol.* 2012;5:4–10.

EDITORIAL COMMENT



Urologic disease is a major contributor to morbidity and health care costs in the United States. A recent National Health and Nutrition Examination Survey indicates the prevalence of kidney stones among US adults has risen to 10%, and it is estimated that some degree of urinary incontinence affects 30% of the

population.¹ According to Surveillance, Epidemiology, and End Results estimates 11.2% of US adults will be diagnosed with prostate cancer, 2.3% with bladder cancer, and 1.7% with kidney cancer over their lifetime.²

Despite the prevalence of these and other urologic conditions, medical schools continue to provide sparse urologic educational opportunities. As noted by the AUA website, "Fifty years ago, virtually all medical students in the United States received didactic training in urology. Currently, only 17% of medical students do so." Shockingly, it seems that 48% of schools surveyed had no urology lectures or coursework required prior to the third year clinical rotations, and only 5% had a mandatory urology clinical clerkship.³

In his 1940 *A Surgeon's Autobiography*, Hugh Hampton Young wrote:

With the rapid development of medical science and art in every direction the undergraduate student has been veritably swamped by the learning to be acquired. Here we make no effort to give detailed instruction to undergraduate medical students, nor to make them expert in urologic technique. If we can sufficiently instruct them in the fundamentals that are of utmost importance to good knowledge of medicine and surgery, we have accomplished enough. If at the same time we can inspire them with the importance and the beauty of the subject, some will be likely to return, demanding to be initiated into the intricacies of the art.⁴

Urology education in medical schools has failed to meet this standard. The cause for these educational deficits is multifactorial, and includes medical school curricula, insufficient Association of American Medical Colleges guidelines, and the relatively small footprint of most urology departments as compared to larger specialties. However it is incumbent on urologists to take

responsibility for advocating for education in our specialty. We agree with Sam et al, that our professional organizations should continue to lobby consistently for mandatory urology rotations for all medical students, particularly as many schools move to increase the time for clinical rotations at the expense of lectures. Every medical student should be cognizant of basic urologic core subjects.

The article by Sam et al may also garner some soul searching from urologists individually. How many of us have reached out to our medical school colleagues and offered to teach? Urologists are busy surgeons, and urology has been a popular field among medical students, perhaps leading to a sense of complacency in our approach to undergraduate medical education. The long-term benefits of being proactive in this regard will be evident in the caliber of our trainees and our colleagues in other specialties.

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References

1. Centers for Disease Control and Prevention (CDC). *National Center for Health Statistics (NCHS). National Health and Nutrition Examination Survey Data*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2013–2014. Accessed July 20, 2018.
2. Surveillance, epidemiology, and end results (SEER) program (<http://www.seer.cancer.gov>). Accessed July 20, 2018.
3. Sam P, Heermans J, Schmidt CM, Deibert C. Current state of urologic medical school education: a scoping review. *Urology*. 2018;117.
4. Young HH. *Hugh Young: A Surgeon's Autobiography*. New York: Harcourt, Brace and Company; 1940.

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