Time for a mandatory urology rotation? Adequacy of urological exposure during medical school – a survey of graduates of the University of the West Indies, Trinidad and Tobago

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Introduction: *To objectively assess the self-reported adequacy and utility of exposure of our students to urology during their training.*

Materials and methods: *A questionnaire was sent to the University of the West Indies graduating class of 2018, now functioning as medical interns. A questionnaire was designed to collect information regarding respondent demographics, perceptions of their urology exposure during their medical school training as well as their attitudes towards the specialty. The survey was also designed to capture respondents' comfort levels with commonly encountered urological scenarios and investigations. The survey was distributed in February 2019 using the online survey tool, Survey Monkey.*

Results: *A total of 196 surveys were distributed, of which 107 responses were returned. Clinic exposure was the most common form of interaction with the specialty during training. Their exposure to common urological procedures was low with only 9.3% and 4.7% having seen a circumcision or prostate biopsy respectively by graduation; 21.7% and 47.7% indicated that they were uncomfortable to review a KUB X-ray and CT respectively to identify a stone; 96.2% considered urology to be an important clinical sub-specialty but 42.4% indicated that their exposure to urology did not prepare them to manage urological conditions that they have encountered since graduation; 87.8% of respondents supported the idea of a urology rotation.*

Conclusion: *The exposure of medical students to urology during their medical training is poor. There remains much room for improvement in exposing our medical students to urology during their training. A dedicated urology rotation should be strongly considered. This study has applications not just within the Caribbean, but further afield.*

Key Words: urology, medical students, Trinidad and Tobago

Introduction

Medical training at the St. Augustine Campus of the University of the West Indies (UWI) commenced in 1989 and it is now the main source of doctors in Trinidad and Tobago. Approximately 150 doctors are graduating annually. The 5-year medical program is followed by a 12-month period of internship, rotating through several specialties including General Surgery, Internal Medicine, Pediatrics and Obstetrics and Gynecology. Following this, the doctor is then certified for independent practice and may enter general practice or seek further specialty training.

As present, the medical program at the UWI does not include a mandatory urology rotation. Students have some exposure to the specialty during surgical rotations in years 4 and 5 in the form of weekly didactic lectures and once weekly visits to the urology

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outpatient clinic. Reducing exposure to urology and the disappearance of mandatory urology rotations is not unique to Trinidad and has been described in North America.[1,2] In general practice, urological conditions are very commonly encountered. In fact, in Trinidad and Tobago, stone disease is ubiquitous and the mortality rate of prostate cancer is among the highest in the world.[3] Bearing all of this in mind, it is therefore crucial that graduating doctors are adequately prepared during medical training. While there is limited evidence of a detrimental impact of limited urology exposure on primary care, it would seem prudent to expose medical students to both clinical and didactic sessions during their medical training.

This study represents the first such evaluation of our graduates to assess their exposure to attitudes towards urology. This cohort is ideally placed to comment on the utility of what they have learnt in the context of their clinical practice as interns following completion of medical school. We hope that it may be the beginning of a discussion on the merits of a mandatory urology rotation in our curriculum. We also believe it may be replicated in other territories outside the Caribbean where training programs may be similarly affected by a lack of urological exposure.

Materials and methods

We surveyed the 2018 graduating class of the University of the West Indies in Trinidad and Tobago using the online survey tool Survey Monkey. A questionnaire was designed to collect information regarding respondent demographics, perceptions of their urology exposure during their medical school training as well as their attitudes towards the specialty. The survey was also designed to capture respondents' comfort levels with commonly encountered urological scenarios and investigations. Some questions employed a Likert scale while others used binary questions (yes/no).

The questionnaire was piloted among 10 junior doctors and edited for clarity. The survey was then sent to all members of the graduating class of 2018 via email in February of 2019. The 2018 graduates were now (in 2019) completing their 1-year internship at various hospitals around the island of Trinidad. Participation was voluntary and anonymous and participants were free to opt out. The data were tabulated and SPSS version 25 was utilized to compute descriptive statistics.

This study was approved by the Campus Ethics Committee of the University of the West Indies at St Augustine.

Results

Overall, 107 responses were returned of the 196 surveys sent, a response rate of 54.6%. There were 37 males (34.6%) and 70 females (64.4%). The mean age of the cohort was 25 years old (s.d. 2.2 years).

The most common means of exposure to urology during training was via outpatient clinic (58.9%) followed by didactic sessions (46.7%), exposure during surgical clerkship (39.3%) and operating room sessions (21.5%). When asked to rate (on a Likert scale of 1 to 5) the most effective means of assimilating urological material, teaching in a clinical setting achieved the highest result with 3.9 followed by didactic classes and independent reading at 3.7 and 3.6 respectively.

We assessed students' comfort with basic urological procedures and investigations by the end of their training. Overall, the students reported low familiarity scores (taken as a score of 3 or less out of 5) for common urological procedures such as the digital rectal examination and male genital examination. They were particularly uncomfortable with changing suprapubic catheters, Table 1. Most students indicated confidence with interpretation of urinalysis and kidney ureter and bladder (KUB) x-ray but were not as confident with CT KUB looking for stones, Table 2.

We also assessed their comfort in dealing with a range of potential urological encounters commonly seen in practice, Table 1.

TABLE 1. **Comfort with common urological clinical encounters**

Urological clinical encounter	Average comfort level
Acute urinary retention	3.1
Hematuria	3.0
Acute scrotal pain	3.0
Scrotal mass	2.9
Renal/ureteric colic	3.3
Erectile dysfunction	2.1
Male infertility	2.1
Diagnosis of prostate cancer	3.3
Digital rectal examination	2.8
Male genital examination	2.6
Passage of urethral catheter	3.8
Change of a suprapubic catheter	1.4

TABLE 2. **Comfort with interpretation of common urological investigations**

	Yes	No
Urinalysis	102 (95.3%)	5 (4.7%)
KUB x-ray looking for stones	83 (78.3%)	23 (21.7%)
KUB CT looking for stones	56 (52.3%)	51 (47.7%)

TABLE 3. **Total numbers of common procedures performed by the end of medical training**

	0	1-5	6-10	11-15	> 15
Digital rectal examination	17 (15.9%)	73 (68.2%)	10 (9.3%)	4 (3.7%)	3 (2.8%)
Male genital examination	21 (19.8%)	56 (52.8%)	13(12.3%)	12 (11.3%)	4 (3.8%)
Passage of a urethral catheter	7 (6.5%)	64 (59.8%)	19 (17.8%)	11 (10.3%)	6 (5.6%)
Change of suprapubic catheter	96 (89.7%)	10 (9.3%)	1 (0.9%)	0	0

With respect to numbers of key procedures performed, 17 (15.9%) and 21 (19.8%) students had never performed a digital rectal examination or male genital examination by the end of their medical training, Table 3. While 29% reported at least observing a ureteric stent or cystoscopy during medical school, only 4.7% and 9.3% had seen a prostate biopsy or circumcision respectively.

A total of 102 students (96.2%) were of the opinion that urology is a clinically relevant and important sub-specialty and overall, 87.8% indicated that they would endorse a formal Urology Clerkship most commonly between 2 weeks (49%) and 1 month (44.7%) long; 30.8% of those surveyed related that they would consider a career in urology, 38.3% said no and 30.8% were unsure.

Asked whether they felt that in hindsight, urology exposure during medical school adequately prepared them for managing urological patients they have encountered as an intern, only 5.7% said yes – 46.2% said somewhat and 42.4% answered no.

Discussion

This survey suggests that the majority of graduates felt that their exposure to urology during medical school was inadequate and did not prepare them for life after medical school. Comfort levels were low with key urological procedures and scenarios and most felt that in retrospect, a urological rotation should be considered.

Most students were of the opinion that a formal urology clerkship should be inserted into the curriculum in Trinidad. As it stands, urology is taught during their 8-week surgical rotations in years 4 and 5. Students are scheduled to attend outpatient clinics and once weekly didactic teaching sessions but do not interact with urology patients on a regular basis as they do with other subspecialties. This equates to approximately 8-10 hours during their Senior Clerkship in year 5. Urological exposure during medical school can vary widely, not just in Trinidad but around the globe[4] and the lack of a mandatory urological rotation is not unique to Trinidad. It was noted in 2013 that only 5% of US medical schools still had a urological rotation as part of the curriculum.[2] This number has in fact steadily declined over the years with one group noting a decrease from 38% to 17% between 1994 and 2004.[1]

In a Canadian study, 44% of students surveyed believed that their urological exposure during medical school was inadequate. Similarly, in our study 42.4% did not believe their urological training adequately prepared them for real-world encounters and only 5.7% were sure that it had. There is, however, potential for remediation. Following a curriculum change and the addition of a mandatory 1-week urology, students in Canada reported improved confidence in dealing with common urological conditions and were in fact more likely to pursue a career in urology.[5] This is food for thought as we review our curriculum.

Urological exposure during medical school also has implications for quality of future referrals to the specialty. Mishail and colleagues noted poor urological knowledge among primary care providers and students and postulated as to the implications of this

on the quality of treatment and referral of urological conditions in primary care. These authors also noted the positive impact of a urology elective.[6]

In our study, no clinical encounter scored highly and some of the most common emergency room scenarios displayed low or borderline scores including digital rectal examination and the male genital examination. Azer and colleagues reported low mean familiarity scores for scrotal pain, prostatitis and epididymitis.[7] Similar to our study, they also noted very low comfort levels with changing a suprapubic catheter, a procedure which is in fact much easier than urethral catheterization. In a study of Canadian medical students, Hoag and colleagues noted low levels of comfort in dealing with infertility, epididymitis prostatitis and erectile dysfunction as well as several common urological investigations. The authors also noted perceived weakness in the teaching of digital rectal examinations and the male genital examinations.[8] Alarmingly, almost one in five of our graduates had never done a digital rectal examination or a male genital examination by the end of their training.

The vast majority of graduates in our survey were of the opinion that urology is an important and relevant subspecialty. This is in keeping with graduates in Saudi Arabia, 94% of whom believed that urology was either important or very important.[9] Similar to our graduates 77% of this group felt that urology should be included as a rotation in the curriculum.

We believe that this study is useful as it is the first objective assessment of the adequacy, or at least perceived adequacy, of urology exposure during medical school. We hope that it may encourage dialogue on the inclusion of urology as a mandatory rotation. There are however, several limitations. We have relied on self-reported information from students which may result in recall and disclosure bias. In order to minimize recall bias, we have tested only the last graduating class and would have obtained opinions on the experiences of only one group of students over 2 years. However, we feel that the data are still very relevant and useful given the uniformity of our training from year to year. Some interns may never have had the chance to manage the full range of scenarios which were assessed and it may also have been useful to objectively assess the exact nature of cases to which the doctors are exposed and the extent to which their urological exposure or lack thereof may have affected their ability to manage these patients.

We should point out that this may be a global issue in that programs in other territories outside the Caribbean may find themselves similarly affected by a lack of exposure to urology. We therefore believe that our work has applications beyond the Caribbean region as it may be replicated elsewhere and can be, as it was for us, the evidence necessary to begin a conversation on increasing urological training during medical school.

Conclusion

The exposure of medical students to urology during their medical training appears to be inadequate. This study demonstrates that there are several areas which require improvement if we are to adequately prepare our students for life after medical school. A mandatory rotation for urology should be strongly considered. □

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