International Medical Graduate Training in Urology: Are We Missing an Opportunity?

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OBJECTIVE To examine trends in international medical graduate (IMG) representation within urology and compare these trends to those of other specialties.

METHODS Urology match data were obtained from the American Urological Association from 1987 to 2015. IMG representation among residencies was extracted from reports on Graduate Medical Education published in *Journal of the American Medical Association* from 1978 to 2013. We analyzed trends in the number of IMG urology applicants, match rates in urology for IMGs vs US medical graduates, and the annual percentage of IMGs among all urology residents vs residents of other specialties.

RESULTS Between 1987 and 2015, 6790 applicants matched into urology. The number of positions offered increased by 24% (224 to 295) between 1987 and 2015. However, the number of IMG urology applicants did not increase accordingly ($r = -0.55$, $P = .78$). Match rates for US students and IMGs ranged from 68% to 91% and 6% to 33%, respectively. From 1978 to 2013, the proportion of IMGs across all specialties remained relatively stable (25% to 27%), whereas the proportion of IMGs in urology decreased substantially (27% to 5%).

CONCLUSION The proportion of IMGs in urology training has dramatically decreased over time and remains lower than most other specialties. IMGs are critical to urology as they can assist in meeting workforce demands, contribute diversity to the workplace, and help to propel the field forward through urologic research. Further efforts should be directed toward understanding the unique needs of IMG residents and helping them to navigate the challenges of practicing in a foreign country. UROLOGY 95: 39–46, 2016. © 2016 Elsevier Inc.

There has been great concern that the growth of an aging United States population coupled with a declining physician workforce will result in physician shortages across all branches of medicine over the next few decades. Urology is no exception, having recently reached a 30-year nadir in the number of urologists per capita.[1] Moreover, urologists continue to gravitate toward urban areas, thereby exacerbating the extent to which rural populations remain underserved.[2] Despite growing physician demand, Medicare-funded residency positions have been capped since 1997 and a recent report from the Institute of Medicine entitled "Graduate Medical Education That Meets the Nation's Health Needs" revealed no plans to expand the number of residency positions in the near future.[3]

International medical graduates (IMGs) are critical members of the urologic workforce with great potential to alleviate workforce demand. Indeed, IMGs are disproportionately represented among underserved counties, in part due to incentives associated with J-1 visa waivers.[4,5] Nonetheless, recent data suggest that the proportion of IMGs in the urologic workforce is declining, and those IMGs currently in practice are older than the typical US medical graduate (USMG) practitioners.[1]

IMG representation within urology is an important issue needing further examination. The shrinking presence of IMGs within the urologic workforce will likely have substantial downstream effects on the ability of the field to meet patient demand. Furthermore, IMGs contribute diversity to the professional workplace, which is important insofar as it provides the opportunity to acknowledge and learn from the differences of others, increases the likelihood that mutually respective care is provided for the diverse range of patient populations, and leads to a richer training environment.[6] The goal of this study is to examine numeric trends in IMG representation within urology and to compare these trends to those of other medical specialties.

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METHODS

Aggregate data pertaining to the annual number of urology match applicants and overall match rates were obtained from the American Urological Association (AUA). Match statistics for IMGs were available beginning in 1987 through 2015. Of note, the year 2000 was excluded from the urology match analysis because it was incomplete.

Data on IMG representation among urology and nonurology residencies were extracted from the annual reports on Graduate Medical Education published in the *Journal of the American Medical Association* from 1978 to 2013. Cumulative data for all national trainees and specialty data for trainees in urology, select medical specialties (internal medicine, family medicine, pediatrics), obstetrics and gynecology, general surgery, and surgical subspecialties (orthopedic surgery, plastic surgery, neurological surgery, otolaryngology, and ophthalmology) were abstracted. For each year, the percentage of IMG residents among all residents in training throughout the United States was either abstracted or calculated, as was the relative percentage of IMG residents within each specialty. The proportion of IMG residents in urology, general surgery, and surgical subspecialties over time was compared by calculating the mean proportion of IMGs at 5-year intervals. USMGs were considered as the sum of both senior and nonsenior US graduates.

Descriptive statistics were used to demonstrate trends in urology applications and the distribution of IMGs among medical and surgical specialties. The χ^2 test was used to assess change in the urology match rate over time and the distribution of the IMG workforce throughout the study period. The Pearson correlation test was used to assess the relationship between number of urology spots offered and number of applicants. All statistical calculations were performed in Microsoft Excel 2013 (Microsoft Corporation, Redmond, WA). This study was determined to be exempt from review by our local institutional review board.

RESULTS

Between 1987 and 2015, 9823 applications were submitted for urology residency and 6762 positions were offered. The total number of urology positions offered annually increased by 24% (n = 224 increasing to 295) between 1987 and 2015. During this period, the number of USMG applications per year increased accordingly by 24% from 319 applicants in 1987 to 395 applicants in 2015 (mean 315, standard deviation 39.4; Fig. 1), which was strongly correlated to the increase in total positions offered during this interval ($r = 0.7$, $P < .0001$). In contrast, the number of IMG applications per year remained relatively constant from 36 applicants in 1987 to 38 applicants in 2015 (mean 36, standard deviation 8.3), which did not correlate with the increase in total positions offered ($r = -0.55$, $P = .78$).

From 1987 to 2015, 6762 (68.8%) applicants matched into urology. Among those who matched, 204 (3%) were IMGs. The overall annual match rate during the study period ranged from 59% to 81%. The mean annual match

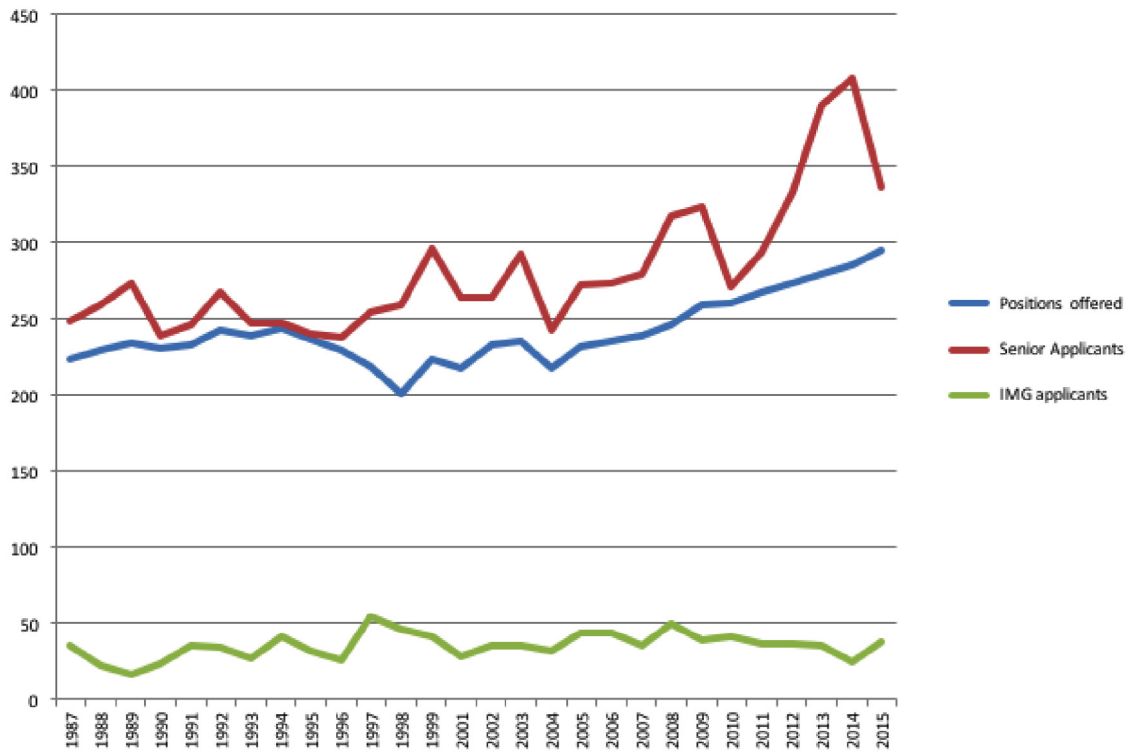

Figure 1. Number of US medical graduate (USMG) vs international medical graduate (IMG) applicants to urology residency relative to the number of positions offered, 1987-2015. (Color version available online.)