

Urology in India: Numbers and practice

In 2018, the number of full members of the Urological Society of India (USI) was 2425 and another 1489 were associate members. With the 2019 Indian population being 1.37 billion,^[1] this translates to one urologist for 564,171 population (using 2425 count). With 12,660 practicing urologists in the United States of America (USA), there were 3.89 urologists/100,000 population in 2018;^[2] however, it was only 1.9 for 100,000 population in Canada (in 2018)^[3] and 1:69,457 for the United Kingdom (UK) (2015 data).^[4] However, the criteria used in the USA, Canada, or the UK may not be applicable to India or other countries. The ideal urologist to population ratio is unknown, and this figure is in a state of continuous flux.^[5] It depends on many factors unique to any country and includes the type of clinical practice in that country, patient demands, and health-care organization, among other factors.^[5] Although the Indian ratio of 1:56,4171 reflects poor availability of urologists as compared to Western standards, the ground reality might be different. Discussion with most urologists working in private sector would reveal that there are not many patients to keep them busy. This has translated into strategies such as banning participation of general surgeons in urology workshops. Therefore, the question arises as to why is there a disparity between theory and real practice?

The reasons could be many. A survey in Europe showed that a chunk of pediatric urology, urogynecology, adrenal gland surgery, treatment of infertility, and renal transplantation is not performed by urologists.^[5] Similarly, urological infections are often treated by nonurologists. This holds true for India as well. Urology is a surgical branch, but the advent of extracorporeal lithotripsy and widespread adoption of pharmacological management for conditions such as benign prostate enlargement and ureteral stones have reduced the share of surgical workload. In fact, in many European countries, this has led to concept of office urologists, and data show that as many as 70% of urologists in France and Germany, 40% in Austria, and 33% in Greece are office urologists.^[5] This has been attributed to the presence of large number of urologists in these countries.^[5] Similarly, data show that countries where urologists are more, many urologists have diversified into other branches and are playing an active role in diagnostic methods (mostly, urography, and ultrasonography).^[5] The population demography of India is vastly different from that of developed countries with the 2011 census showing that 40.71% of Indian population is of age 19 or lower.^[6,7] Data show

that urological problems are more common in elderly.^[8,9] Furthermore, the disease profile of India is vastly different. In a landmark study published in the Lancet involving 167 authors, the 2016 data of disease burden in India revealed that communicable, maternal, neonatal, and nutritional diseases comprise 27.5% of disease burden.^[10] Noncommunicable diseases contribute to 61.8%, while injuries cover the rest 10.7%. This 61.8% group of noncommunicable diseases includes 28.1% share of cardiovascular diseases, 10.9% of chronic respiratory diseases, 2.1% of cirrhosis, and other liver diseases, 2.2% of digestive diseases, 2.1% of neurological diseases, 0.4% of mental and substance abuse disorders, 0.1% of musculoskeletal disorders, and 8.3% neoplasm with only 6.5% combined share of diabetes, urogenital, blood, and endocrine diseases (total 61.8% after adding 1.1% as miscellaneous conditions).^[10] Moreover, urological practices may differ from country to country. This might especially be true for quality of life conditions such as benign prostate enlargement, erectile dysfunction, and others. Applying urologist to population ratio of 1:54,062 with practice pattern and workload of the USA, a urologist will perform 240 cases annually.^[5] All these data point to the fact that similar yardsticks cannot be used for calculating number of urologists in any given country.

Like in the USA, where 90% of urologists practice in metropolitan areas,^[2] in India too, urology services are concentrated in cities. However, unlike the USA or Europe, many Indian urologists go to nearby cities to provide basic urology services such as transurethral resection of prostate, transurethral resection of bladder tumor, ureteroscopy, percutaneous nephrolithotripsy, optical internal urethrotomy and basic surgeries such as nephrectomy, pyeloplasty, and even urethroplasty and are labeled “roaming urologists.”^[11,12] They carry their own equipment to perform these procedures usually in a local hospital run by general surgeons. This is quite similar to the services provided by surgical teams that travel from developed nations to underdeveloped parts of the world where they provide surgical services (as charity or training purposes) and then return to home country.^[13,14] Furthermore, this is similar to guest faculty operating in live workshops, where the preoperative and postoperative care are taken care by the host institute. Each weekend these “roaming urologists” travel to nearby small towns to provide urological services and thereby, cover a large geographical area where, otherwise, hospitals with urologist are lacking.

In 2015, the Government of India reclassified cities into three categories: X, Y, and Z.^[15,16] There are 11 cities classified as X (including Delhi, Hyderabad, Bengaluru, etc.), and 88 classified as Y (including Lucknow, Agra, Bhopal, Jaipur,

etc.).^[15] In India, most urologists are concentrated in category X and Y cities.^[12] All places with a municipality, corporation, cantonment board, or notified town area committee are classified as statutory towns. According to the 2011 census, there are 4041 statutory towns in India.^[16]

The twin problems of poor urologist to population ratio and limitation of availability of urologists to big cities have always been a matter of concern. It is a common belief among policy-makers that increasing the number of residency seats will solve both these problems. By increasing the pool of urologists, many would be forced to work in rural areas for their survival. However, this view is too simplistic and could be wrong. Within countries, the uneven distribution of urologists is a universal phenomenon and is seen even in the most developed countries, including the USA.^[17] The past available data of 2018 show that out of 3144 counties in the USA, 1968 (62.6%) counties do not have a single urologist.^[2] Almost 13% of the American population live in counties without a single urologist.^[17] Furthermore, experts believe that simply increasing the number of residency seats will increase this disparity and worsen the situation.^[17] There is no reason to believe that Indian urologists will behave differently. In India, “roaming urologists,” who are board-certified, provide services in areas where hospitals exist but urologists are lacking, and thus fulfilling an important national requirement.

Of the established subspecialties with postgraduate MCh program, the USI started in 1961, the Association of Plastic Surgeons of India started in 1957, the Indian Association of Pediatric Surgeons started in 1965, and the Neurological Society of India were formed in 1951. Many new subspecialties have emerged in the past few years (with MCh programs) such as endocrine surgery and hand surgery, but are not included in this article, because their data are not comparable to older subspecialties. The MCh degrees started in 1950s and 1960s, with MCh in Urology starting in 1965, Pediatric surgery in 1966, Neurosurgery in 1956, and Plastic Surgery in 1960 (first batch appeared for examination in 1962). However, of all the traditional subspecialties, urology witnessed the most rapid growth. The training centers imparting urology training have increased exponentially from 30 to 35 in 2009^[18] to 139 (89 for MCh and 50 centers for Diplomate of National Board) today. Today, the USI has 2425 full members (along with 1489 associate members) as compared to 1360 neurosurgeons (2017 data),^[19] 2000 plastic surgeons, and 1300 pediatric surgeons^[20] (2015 data). Urology is among the fastest growing specialty with the annual number of seats available for MCh/DNB degree at 370 (MCh: 280, DNB: 90), 333 for Neurosurgery (MCh: 294, DNB: 39), 248 for Plastic Surgery (MCh: 233, DNB: 15), and 193 for Pediatric Surgery (MCh: 184, DNB: 9). With about 500 medical colleges in India and numerous potential DNB centers, the growth of urology is likely to be exponential. Already, the USI has grown from 1394 full members in

2009 to almost double at 2425 in 2018. It is possible that we achieve the “developed country” urologist to population ratio in India soon. However, with significantly higher urologists as compared to other subspecialists, there is a risk of losing “the urology brand value.”

Currently, we do not have Indian data to calculate the number of urologists needed for India. Blindly following standards of developed countries might be harmful. The stake holders must evolve a long-term policy so as to fulfill Indian requirements.

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Apul Goel*

Department of Urology, King George's Medical University,
Lucknow, Uttar Pradesh, India
*E-mail: drapul.goel@gmail.com

REFERENCES


1. Available from: <http://worldpopulationreview.com/countries/india-population/>. [Last accessed on 2019 Aug 28].
2. The State of the Urology Workforce and Practice in the United States; 2018. Available from: <https://www.auanet.org/Documents/research/census/2018%20The%20State%20of%20the%20Urology%20Workforce%20Census%20Book.pdf>. [Last accessed on 2019 Aug 28].
3. Urology Profile. Canadian Medical Association. Available from: <https://www.cma.ca/sites/default/files/2019-01/urology-e.pdf>. [Last accessed on 2019 Aug 28].
4. British Association of Urological Surgeons and the Specialist Advisory Committee in Urology. Workforce Report; September, 2015. Available from: https://www.baus.org.uk/_userfiles/pages/files/About/Governance/2015%20FINAL%20Workforce%20Report%20Master%20vs2_.pdf. [Last accessed on 2019 Aug 28].
5. Kiely EA. The European board of urology survey of current urological manpower, training and practice in Europe. *BJU Int* 2000;85:8-13.
6. Available from: http://censusindia.gov.in/Census_And_You/age_structure_and_marital_status.aspx. [Last accessed on 2019 Aug 28].
7. Demographics of India – Wikipedia. Available from: https://en.wikipedia.org/wiki/Demographics_of_India. [Last accessed on 2019 Aug 28].
8. Suh J, Kim KH, Lee SH, Kim HS, Lee YJ, Lee SR, *et al*. Prevalence and management status of urologic disease in geriatric hospitals in South Korea: A population-based analysis. *Investig Clin Urol* 2017;58:281-8.
9. Shah J, Whitfield HN. Urology in perspective. *BJU Int* 2003;91:737-42.
10. India State-Level Disease Burden Initiative Collaborators. Nations within a nation: Variations in epidemiological transition across the states of India, 1990-2016 in the global burden of disease study. *Lancet* 2017;390:2437-60.

11. Islam AA. Urology in Asia – bangladesh. *Int J Urol* 2011;18:494.
12. Gopalakrishnan G. Urological education in India: A status report. *Indian J Urol* 2009;25:251-3.
13. Husain A, Johnson K, Glowacki CA, Osias J, Wheelless CR Jr., Asrat K, *et al.* Surgical management of complex obstetric fistula in Eritrea. *J Womens Health (Larchmt)* 2005;14:839-44.
14. Capuano GP, Capuano C. Surgical management of morbidity due to lymphatic filariasis: The usefulness of a standardized international clinical classification of hydroceles. *Trop Biomed* 2012;29:24-38.
15. Available from: <https://finmin.nic.in/hra-and-cities-classification-issued>.
16. Available from: http://censusindia.gov.in/2011-prov-results/paper2/data_files/India2/1.%20Data%20Highlight.pdf [Last accessed on 2019 Aug 28].
17. Odisho AY, Fradet V, Cooperberg MR, Ahmad AE, Carroll PR. Geographic distribution of urologists throughout the United States using a county level approach. *J Urol* 2009;181:760-5.
18. Aron M. Urology training in India: Balancing national needs with global perspectives. *Indian J Urol* 2009;25:254-6.
19. Misra BK, Singh VP. Neurosurgery in India. *AANS Neurosurgeon* 2017;26: Available from: <https://aansneurosurgeon.org/inside-neurosurgeon/neurosurgery-in-india/>. [Last accessed on 2019 Aug 28].
20. Shah R. The past, the present, and the future of pediatric surgery in India. *J Indian Assoc Pediatr Surg* 2015;20:2-7.

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