



# Dialogues in Pediatric Urology

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## Perspectives on Pediatric Urology Fellowship Education and Mentorship

### FROM THE GUEST EDITORS

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**Emilie K. Johnson, MD, MPH, Lurie Children's Hospital, Chicago  
Israel Nosnik, MD, Urology Clinics of North Texas, Dallas**

The topic of this edition of Dialogues is pediatric urology fellow education. The two of us have represented our colleagues as the fellow representatives to the Society for Pediatric Urology, and as part of this role, we were asked to serve as guest editors for this edition. We decided to focus on a variety of salient topics faced by pediatric urology trainees and pediatric urologists who are serving as our teachers and mentors.

Many of our fellowship colleagues helped us reflect on our experiences as trainees by providing candid answers to a query regarding timing of their research experience during fellowship. We also asked 2013 and 2014 fellowship graduates to describe the highlight of their fellowship experience. The answers we received reflected optimism and excitement in the current generation of young pediatric urologists.

We also received contributions from pediatric urology faculty at four academic institutions. Their pieces cover a breadth of topics related to fellow education. In considering these pieces in aggregate, an important common theme emerged among several of them: balance. Dr. Dennis Liu discusses strategies for balancing resident and fellow education in a program committed to the education of both levels of trainees. Dr. John Park provides his thoughts on how to achieve the perfect number of fellowship spots domestically. Finally, Dr. Bartley Cilento presents us with the variety of factors that must be balanced (e.g. balancing duty hour restrictions with adequate case volume for training) when designing a training program.

Being guest editors for Dialogues has allowed us to reflect on our fellowship experience in a unique and meaningful way. We truly appreciate the time and energy our colleagues and mentors have put in to making this edition reflect many of the current issues related to pediatric urology fellowships.

### FROM THE EDITOR

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**Elizabeth B. Yerkes, MD**

Every year the fellows elect one of their colleagues to represent them on the Pediatric Urology Coordinating Council. This is a two year leadership position, so there is a junior and senior fellow representative at all times. As Emilie Johnson and Izzy Nosnik were wrapping up their terms as fellow representatives, I invited them to guest edit DPU, highlighting a topic of interest and importance to current trainees and to former trainees of all ages (the rest of us).

They have put together an excellent Edition—nobody knows the state of fellowship education and mentorship better than the fellows! I believe that we all recognize the opportunity to shape the future of our field when recruiting young talent and training that talent. We also have the privilege to continue as mentors until we are no longer needed. There is a little something here for everyone.

Congratulations to each of you for what you have given and received! We still have some work to do but it is well worth it!

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### Society for Pediatric Urology

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# Reflecting on Pediatric Urology Fellowship: A Survey of Recent Pediatric Urology Fellows

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As part of our exploration of pediatric urology fellowship training, we conducted an informal survey of fellows completing their programs and those that graduated within the past year. We received 14 responses. Respondents were assured that their comments would remain anonymous and presented collectively. We asked two open ended questions:

1. Was there an advantage to doing your clinical or research year first and why?
2. What was the highlight of your fellowship experience?

The responses we received were candid, with fellows seeming to speak freely about their experiences. In discussing the ordering of their research and clinical years, it appeared that most were happy with their curriculum going into fellowship or at least found a way to appreciate the positive aspects of the curriculum order their matched program offered. Although this was a small, informal survey, there were clear themes identified in the responses.

Clinical year versus research year first stemmed two different schools of thought with respect to preparedness for independent practice. Those who started with a clinical year first and ended with research unanimously praised the opportunity to have an independent practice opportunity typically one day per week during the research year as they already had their clinical year under their belt. They reported that it gave them the ability to care for patients independently in a controlled environment with the available support of their mentors and faculty. Many of the same group of fellows also appreciated transitioning from the surgical complexity of their chief resident year directly into the complex and technically challenging nature of clinical fellowship. Lastly, by spending a year at the institution prior to starting their research year, they had forged relationships with potential mentors both within and beyond the department of pediatric urology. As one respondent said, "I was able to avoid being thrown into Dr. NIH's lab to do XYZ project I wasn't interest in."

Starting with research first and ending with the clinical year was also praised for a number of reasons. First, fellows felt that the re-

search year provided a welcomed reprieve from their densely clinical and hectic chief resident experience. The research year afforded time for reading and preparation as well as completion of the written boards exam without detracting from clinical time. Also, by starting with a research year, projects that were not completed during that year could be wrapped up during in the clinical year. As one respondent put it, "Good research takes time." Finally, the fellows noted that completing fellowship with the rigorous clinical year facilitated the immediate transition to serving as the attending by minimizing the latency time during which surgical skills fade.

In responding to the second question, fellows nearly universally mentioned that their mentors and the clinical experience were the highlights of their fellowship. One fellow mentioned that her clinical year was filled with diverse cases with varying levels of complexity and that she was "busy every day, but not overwhelmed." The clinical year offered the opportunity to learn multiple ways to care for a patient or a problem and multiple approaches to the same procedure. Another fellow found that fellowship was his first experience truly independently caring for a patient and led to "seeing a patient's life change from the care [he] provided."

Fellows noted that they were trained by "the best in the field" and by "mentors who truly cared about [their] development as a pediatric urologist." Other mentioned that the enthusiasm of the faculty was "infectious" and that they had solidified life-long relationships with mentors that they could contact at any time in the future to consult or discuss cases. One fellow found that the highlight of his fellowship was the opportunity to mentor the residents whom he worked with.

The responses elicited in our small, non-scientific sample exemplify exactly what we hoped for as guest editors of this education-themed issue of Dialogues. We found that anecdotally, pediatric urology fellows latched on to the opportunity they were given and found the positive aspects of the organization of their fellowship. Most importantly, however, the recurring theme of mentorship as a highlight of training suggests that the effort and true passion for surgical education found in the pediatric urology faculty at programs across the country is paying off. And for that reason, we as fellows thank you for the time you dedicate to training us.

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# Mentorship in Pediatric Urology Fellowships

Ming-Hsien Wang, MD

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The past 10 years have seen significant changes in American graduate medical education, largely driven by the goal of improving the quality of training through the creation of a set of measurable standards. This presents a great opportunity for us as a subspecialty to re-evaluate our educational methods to ensure the effective training of the next generation of pediatric urologists.

Our group at Johns Hopkins recently published the result of a survey that assessed recent fellowship graduates on their perception of how well their training prepared them for their practice. What we found was that newly minted pediatric urologists highly value the “apprenticeship model” of training and emphasized the importance of faculty supervision and face-to-face communication. We also noted that fellows’ learning patterns are in concordance with those of other adult learners, i.e., they tend to be goal-oriented and motivated to learn that which is necessary to accomplish a task or solve a problem.

Since our study, we have adapted an individualized learning plan at Johns Hopkins based upon each entering fellow’s prior experience and talents. We meet early on to define learning goals and objectives, identify areas for improvement and assess throughout the year to fine tune their training. The ACGME has provided metrics which, while admittedly cumbersome at times, do in fact assist us in quantifying this progress.

Academic pediatric urologists also have the responsibility of identifying urology residents who might have an interest in subspecializing

in our field. Those with interests in reconstructive surgery tend to gravitate towards our specialty. Early exposures to pediatrics both in and outside of the operating room are critical. Active involvement in procedures such as hypospadias appeals greatly to residents who enjoy the challenges of reconstruction.

There is also a great deal of discovery to be made in the field of pediatric urology. Early mentorship and involvement in research is important, forging relationships that benefit both mentor and mentee. Faculty members tap into the energy and novel ideas of their trainees, increasing their own academic productivity. Residents establish the seriousness of their commitment to pediatric urology by strengthening their CVs. By having the opportunity to attend and present at national meetings, prospective fellowship applicants can begin to network and exchange ideas with the experts in the field away from their home institutions. I can still remember one of the most exciting AAP meetings that I attended as a resident, featuring a panel discussion on posterior urethral valves. I found it fascinating that a tiny flap of tissue can generate so much destruction (and discussion)!

Undoubtedly, there will be new clinical challenges and diversity of complex surgical cases even after a formal training. Continual support and advice from mentors are invaluable. Ultimately, it’s our desire as physicians to do the best for our patients/families that drives us for perfection.

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*Faculty members tap into the energy and novel ideas of their trainees, increasing their own academic productivity.*

*What we found was that newly minted pediatric urologists highly value the “apprenticeship model” of training and emphasized the importance of faculty supervision and face-to-face communication.*

# Current Challenges in Pediatric Urology Fellow and Resident Education: One Program Director’s Perspective

Bartley G. Cilento, MD, MPH

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Drs. Elizabeth Yerkes, Emilie Johnson and Izzy Nosnik have selected the current state of resident and fellow education and surgical training as the topic for this edition of Pediatric Dialogues. In this essay, I will discuss challenges facing both general and pediatric urology training from the perspective of a pediatric training site intimately involved in the regulatory issues for four Boston-area residency programs. In essence, the current paradigm requires the integration of regulatory requirements including duty hour restrictions (DHR), and personal time off (vacation, maternity leave) and mandatory training (in-dex cases, professionalism, fatigue recognition, etc.), with clinical and surgical coverage in the setting of a competitive marketplace.

## Regulatory Issues

At Boston Children’s Hospital, we have a separate Graduate Medical Education (GME) office to facilitate compliance with all regulatory requirements, including monthly duty hour reports and periodic internal program reviews. The office currently has 2.5 full time employees. There are monthly meetings attended by training directors from participating programs that provide a forum for sharing resources and a platform for meeting ongoing regulatory requirements. Due to increasing oversight, regulation, auditing, and documentation required to maintain accreditation, most training institutions have seen an in-

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## Current Challenges in Pediatric Urology Fellow and Resident Education *(continued from previous page)*

creased need to expand their GME staffing. Larger and better funded institutions have the resources to expand staffing of GME offices to negotiate the ever-changing oversight of the ACGME to ensure compliance whereas smaller and less funded institutions may be understaffed.

### Training Requirements and Surgical Volume

What about surgical training at the individual level? On the whole, trainees have experienced diminished surgical volume; however, this varies by region, by specialty, and by institution. Regarding diminished surgical exposure, there are many factors to consider but surgical volume and DHR remain most important. In a study published in the *Journal of the American College of Surgeons*, 41% of respondents believe the DHR to be a barrier to their education and 44% felt that 80-100 hours would be the ideal work week.<sup>1</sup> This study was published prior to the increased regulations imposed by the ACGME in July 2011. A subsequent *JAMA* article in 2013 showed that a majority of surgical residents disapprove of the 2011 ACGME requirements, again citing impediment to their surgical training.<sup>2</sup> Female surgical residents may have additional challenges related to pregnancy and subsequent time away from surgical training.<sup>3</sup> Programs must embrace these issues in order to recruit and retain talented surgeons.

As previously mentioned, surgical volume is another factor affecting training. Across the US, free-standing surgery centers are increasing both in number and volume to maximize surgical productivity and efficiency. These high volume facilities draw surgical cases away from training programs as many are not staffed with residents or affiliated with teaching programs.<sup>4</sup> The overall effect of these issues impacts training programs to varying degrees.

The asymmetric effect of these issues is further transmitted between urology resident training and fellowship training. In general, pediatric urology fellowships currently have little difficulty with providing adequate surgical volumes needed to train proficient pediatric subspecialists, save such rarities as exstrophy. However, this is not a static issue and needs monitoring, especially with the continued growth in the number of accredited fellowship training programs. Currently, there are a total of 29 pediatric urology fellowship positions – the most ever.

In contrast, there is much more variation in the case volume and variety between general surgery residency programs as compared to pediatric urology fellowships. Some general urology programs have excess surgical volumes whereas others may not. Review of the residents' completed and submitted surgical logs will demonstrate the

national percentile ranking. Trends in a program's percentile rankings for each procedure should be monitored closely by the program director in order to assure a complete training experience for the house staff. Of note, the American Board of Urology has decreased the required minimums of certain index cases.

***AHC must change or risk extinction. We must change the way we view the educational process and look to opportunities to maximize our “teaching moments.”***

### Strategies for Improvement

The challenges of our current educational environment necessarily create an atmosphere of urgency and innovation. Academic health centers (AHC) are particularly affected given the higher cost of care and the “margin meltdown” under the Affordable Care Act. AHC must change or risk extinction. We must change the way we view the educational process and look to opportunities to maximize our “teaching moments”. In essence creating a culture of teaching “urgency” regarding each surgical case is one frontline approach. This requires preoperative preparation, intraoperative discourse and postoperative discussion between the trainee and mentor. Roberts et al recently published their model for this approach.<sup>5</sup> This is not a new concept but practiced with little regularity due to numerous reasons. In the surgical disciplines, most residents become proficient by repetitive exposure to real surgical procedures. There is evidence to suggest that simulation is helpful to a point but certainly no substitute for real surgical exposure. Additionally, DHR should be reevaluated for the surgical specialties. Other strategies include the use of midlevel practitioners (MLP) which includes NPs and PAs. The MLP can assist in inpatient care and consultations allowing residents greater participation in other educational opportunities such as the operating room and teaching conferences.

***....and will need to adapt in order to maintain their standing as centers of excellence, education and innovation.***

### Conclusions

There are many forces causing tremendous shifts in health care delivery. AHC seem particularly affected and will need to adapt in order to maintain their standing as centers of excellence, education and innovation. Currently, pediatric urology training programs appear to meet the challenges in providing a robust educational experience. However, one thing is certain – change is inevitable and we will need to adapt our educational framework in response.

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# Is it Possible to Have a Successful Fellowship Without Compromising Resident Education?

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Since the American Board of Urology established a subspecialty certificate in pediatric urology, the number of pediatric urology fellowship positions has grown from 22 in 2008 to the current complement of 29. As most, if not all, fellowship programs are housed within an academic institution with established urology residency programs, it is important not to allow fellowships to adversely affect resident education. A core requirement of the ACGME mandates that programs must "meet the needs of the pediatric urology fellow without compromising the quality of resident education."<sup>1</sup> While many involved in pediatric urology fellowship programs believe that the educational needs of both fellows and residents are being met satisfactorily, the true impact of fellowship programs on resident education is far less clear.

## Does a fellowship have a positive or negative impact on resident education?

There is unfortunately a paucity of literature on the impact of fellowships on resident education, and even fewer examining the impact in urologic training. On one hand, the presence of a fellow may positively impact resident education by contributing to resident teaching and conferences, attracting an increased number of complex cases, and serving as an impetus for departmental growth. On the other hand, the presence of a fellow may take away from the operative and leadership opportunities for residents. The true impact of fellowships on surgical education was recently examined in a meta-analysis of 23 published studies across a variety of surgical disciplines.<sup>1</sup> Results of this meta-analysis found only one study showing a clear positive impact, 9 demonstrating a clearly negative impact, and 13 with mixed or minimal impact.<sup>2</sup>

In urology, only two studies have been published examining the impact of fellowships on resident education. In the first, Grober et. al. surveyed the faculty, fellows, and residents at the University of Toronto and found vastly disparate views between residents and faculty. Residents strongly believed that fellows "stole" surgical cases and felt operating with fellows was inferior to operating with an attending. Faculty and fellows believed that certain complex cases should be designated as "fellow" cases and thus did not adversely affect resident surgical cases. Overall, however, both groups believed that fellowships did add to the overall educational experience of residents.<sup>3</sup>

In the second study, specifically in pediatric urology, Duffy et. al. found a negative impact. The authors examined the residents' case logs and in-service scores at Vanderbilt University before and after the

establishment of their fellowship. Although the total number of index cases and in-service scores remained unchanged and residents continued to be above the 50<sup>th</sup> percentile nationally in index cases, residents did perform fewer numbers of major index cases such as hypospadias repairs, pyeloplasties, ureteroneocystostomies, renal surgeries, and urinary/bowel diversions after the establishment of a fellowship.<sup>4</sup>

## Strategies for successful relationship

So how can programs with fellowships maintain excellence in resident education? First and foremost, programs must ensure sufficient clinical volume and surgical cases to satisfy the educational needs for both fellows and residents. This can be accomplished by continuing to build surgical volume through the addition of new clinical faculty members and the establishment of off-site practices. For instance, our institution has the privilege of hosting trainees from multiple residency programs. While providing residents an educational experience at the main children's hospital, we also provide the pediatric urologic care at these outside institutions. By doing so, we have increased our practice's clinical and operative volumes and have established "protected, fellow-free" sites for residents at their home institutions.

Furthermore, rigorous objective monitoring of the resident's clinical experience is essential to ensuring that the educational needs of each individual resident is met. At our institution, the education director reviews the case logs and clinic experiences of each resident on a bi-weekly basis. Close monitoring allows deficiencies and inequalities in both case numbers and variety of cases to be readily uncovered and remedied in a timely fashion. Overall case numbers are also reviewed on an annual basis at the divisional level to ensure sufficient clinical volume for the program's current resident and fellow complement.

Another strategy to promote a positive impact of fellowships on resident education is to actively engage the fellow in resident education. In this role, fellows would be expected to help design and implement the didactic teaching curriculum for the residents. Benefits from this would include building a team identity, the development of the fellow's teaching skills, and improved didactic teaching for residents that often suffer if left to rely on the time-constrained clinical faculty. Implementation of such a program has been successfully described in pediatric training to improve the educational experiences for both fellows and residents.<sup>5</sup>

Lastly, it is important to ensure that residents perceive that their education is as important to the program as the fellows'. One way to accomplish this would be to appoint separate education directors for fellows and residents. The resident education director would serve as the faculty advocate for resident educational needs and issues, as well as serving as the "go-to" person for resident concerns or conflicts. By working closely but independently from the fellowship education director, the needs and interests of both parties can be preserved.

The successful incorporation of a fellowship program within a resi-

*While many involved in pediatric urology fellowship programs believe that the educational needs of both fellows and residents are being met satisfactorily, the true impact of fellowship programs on resident education is far less clear.*

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## Successful Fellowship

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dency training programs often faces a number of significant challenges. As educators, it is imperative that we continue to devise and implement strategies to create a symbiotic relationship. And while a subspecialty certification in pediatric urology has been established, board certification in urology continues to require competency in all aspects of adult and pediatric urology. Therefore, even as we are tasked to training future pediatric urologists through fellowships, we continue to be responsible for ensuring that urology residents receive the education that they need to incorporate pediatrics into their future practices.

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## Pediatric Urology Fellowship Positions: Too Many or Too Few?

John M. Park, MD

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When I entered the pediatric urology fellowship match back in 1996, there were about dozen programs for which 30-plus highly qualified urology residents aspiring for a career in pediatric urology competed. In 2014, according to the Society for Pediatric Urology website, there are currently 29 ACGME-accredited programs available. Some programs accommodate more than one fellow per year, bringing the total possible fellowship positions to about 30 each year. All programs are associated with an academic institution with a dedicated children's hospital, and they all seem to offer an excellent overall clinical training. Each program's academic focus is different, reflecting its unique resources and faculty expertise.

My personal feelings about the 'correct' number of fellowship positions in pediatric urology are mixed. There are many reasons why the current number of fellowships may be appropriate. With the steady rise in the number of tertiary care children's hospitals throughout the country, public expectation for high quality pediatric subspecialty care such as pediatric urology has risen as well. The explosive growth of pediatric urology subspecialty has a short but well-chronicled history. Until this century, pediatric urology topics received very little to no attention. The Campbell's Pediatric Urology Textbook published in 1937 was the first systematic knowledge base for our field. A landmark event in pediatric urology occurred in 1948 where the Society for Pediatric Urology formed in concept during a cab conversation between Frank Bicknell and Harry Spence (the first SPU meeting took place in Chicago in 1951). The Committee on Urology was formed in the American Academy of Pediatrics in 1960 (later became a Section in 1971). What followed was an explosive growth in the practice, scope, and knowledge base of pediatric urology over the ensuing two decades. The first ACGME accredited pediatric urology fellowship began in 1988. The American Board of Urology issued its first Pediatric urology subspecialty certification twenty years later in 2008.

With these changes, there has been a gradual but definite shift of pediatric cases (even the routine ones) from general urology practice to pediatric subspecialty certified practitioners, as access to providers (in collaboration with children's hospitals) has continued to expand. There has also been a noticeable shift in the general urology residency training focus on pediatric urology. Most of the graduating residents heading toward general urology practice no longer feel motivated to

incorporate pediatric care as part of their practice, and the senior residents honing their clinical skills with a final touch up are becoming a rarity in pediatric urology rotations, especially those programs with clinical fellows.

Given these changes in the overall landscape of pediatric urology, for a while (it is difficult to say for how long), there may be a legitimate need for producing 30-plus fellowship trained pediatric urologists annually to keep up with the market demand. Over the long run, however, this pattern may not be sustainable.

In my opinion, there are too many pediatric urology fellowships for the long run because of the following factors:

### 1. Changing demographics

The birth rate has been on a steady decline since the WWII. In Michigan, for example, the number of babies born in 2012 was the lowest it has been since 1940. Many of the "Index" pediatric urology cases' incidence is well established, including hypospadias and cryptorchidism. Although there have been some speculations that the overall incidence of genital anomalies may be on the rise, it is likely that the total number of index cases are on a decline due to fewer children being born.

### 2. Changing Case Mix

There will be fewer cases that require life long reconstructions and follow-up. Some of the complex congenital anomalies that require many reconstructive interventions and follow-up are declining, such as bladder exstrophy. This trend is not only affected by the declining birth rate but also by elective termination of pregnancy when these conditions are suspected prenatally.

### 3. Changing Practice Paradigms

The indications for surgical intervention continue to decrease. For example, guidelines continue to evolve regarding evaluation for reflux (i.e., the AAP UTI guidelines) and the management of reflux (i.e., the AUA reflux guideline). Formerly black-and-white indications for surgical evaluation and intervention are no longer advocated and are considered either optional or recommended. Finally, there are more and

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## Too Many or Too Few?

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more non-surgical care paradigms that may be provided by physician extenders and mid-level providers. For example, many patients who are referred to pediatric urology clinics as 'UTI,' the first (and sometimes the most effective) mode of treatment is management of bladder and bowel dysfunction. Does the execution of such non-surgical paradigms require fellowship-trained pediatric urologists?

We need a broader view of our future. What we need in fellowships is not simply the number that provides the short-term workforce needed to fill the job opportunities created by unpredictable changes in certification processes and the rise of children's hospitals (which too may not be sustainable with the forces that will drive for larger, consolidated health care organizations). Rather, we need to focus on developing a cadre of young and energized colleagues who will drive innovation and expansion of our field's boundaries. We need to better define the outcome of our field's work that can establish a more effective utilization of declining resources.

The current practice paradigms must be examined and challenged. For example, the trend to-

ward a non-operative management of reflux and hydronephrosis must be assessed in the context of its potential impact when the children become adults. Finally, we need a leading voice in the management of transitional care for pediatric urology patients who are becoming adults. We also need to engage the world at large outside the United States where the need for expert surgical care still remains very high. We need talented and passionate leaders who will be equipped to drive innovation for new diagnostic and treatment paradigms.

In conclusion, the current number of pediatric urology fellowships may be justified for the short term, but I remain concerned that with the changing landscape of declining pediatric demographics and evolving practice pattern toward non-surgical management, we will soon end up with too many fellowship trained pediatric urologists whose surgical work will be divided up into smaller and smaller pieces. In the long run, there will not be enough positions to justify clinically competent but undifferentiated pediatric urologists. What we need is not more clinical fellowships, but rather unique academic programs with eyes to the future.

*What we need is not more clinical fellowships, but rather unique academic programs with eyes to the future.*

## Volunteerism: Opportunities for Becoming a Better Pediatric Urologist

**Amy Steele, IVUmed Program Director**

**Stacey L. Cole, 2013-2014 IVUmed Research Fellow**

**Elizabeth DeBroux Jones, IVUmed Communication Coordinator**

**Hiep T. Nguyen, MD, Chair, IVUmed Board of Directors**

For most individuals pursuing pediatric urology fellowship, the goal is to acquire an extensive clinical and surgical experience which in turn will establish a strong and broad knowledge base. Traditionally, this education has been limited to learning at a national medical institution, proctored by established practicing pediatric urologist(s). More recently, alternative methods of fellowship education, such as participation in volunteer organizations that provide international surgical workshops, have been recognized as effective adjuncts to the traditional learning method.

*Under the guidance of board-certified urologists, trainees witness firsthand the level of need in the countries in which they serve and the importance of continued international medical volunteerism and training.*

IVUmed, a nonprofit organization, is dedicated to building urology capacity in resource-limited areas of the world. Since 1999, 175 trainees have traveled with IVUmed to collaborate with international partners on surgical service and education in over 30 countries in parts of Africa, Asia, Central America, and South America. Under the guidance of board-certified urologists, trainees witness firsthand the level of need in the countries in which they serve and the importance of

continued international medical volunteerism and training.

Working with IVUmed provides pediatric urology fellows with several unique opportunities not commonly found during their fellowship. First, it provides the trainees with the chance to encounter urological conditions such as disorders of sexual differentiation and certain infectious diseases affecting the urinary tract that are uncommon in the North America. Limitation of resources, geographic, genetic, or societal differences make some regions "hotspots" for higher prevalence of particular urologic conditions or other co-morbidities that may need to be considered when treating patients. As an example, hypospadias occurs in 1 in 125-250 boys and is prevalent worldwide. In the US, the majority of boys will present early, have distal hypospadias, and undergo repair typically within the first couple years of life. Abroad, trainees are more likely to encounter cases of proximal hypospadias requiring much more extensive repairs. Working abroad in areas endemic with these conditions offers large case loads and helps trainees gain experience with rare conditions that they may not frequently encounter at their training institutions.

Second, participating in international surgical workshops provides the trainees with opportunities to service populations with far fewer resources. Across the world, 1 billion people live in abject poverty, with 46.2 million being in the U.S. Working abroad, the trainees learn to be resourceful when there is a lack of money, supplies, equipment, post-operative supportive care, and medications. They learn to be inventive, modifying surgical technique and care in order to adapt to the

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## Volunteerism *(continued from previous page)*

available resources. Trainees are often unaware of the cost of the supplies used during their surgery; they are creatures of habit when it comes to doing surgery with specific sutures and catheters. Working abroad allows the trainees to work within the limits of their environment to determine what they truly need, and to eliminate costly “bells and whistles.” The trainees return to their home institutions with experience that can be used to take care of our own impoverished patients and with a fresh perspective in thinking of innovative ways to provide high quality services that are cost-effective.

Third, working abroad provides the trainees with the opportunity to teach and be a mentor. In low and middle-income countries, subspecializing in surgical specialties is often unavailable and very uncommon due to lack of resources. For example, there are 30 urologists for over 40 million people in Kenya. There are a small few, if any, who specifically practice pediatric urology care. The trainees help to teach their international counterparts about procedures they perform more frequently in the U.S., but may be new or novel to the surgeons they are working with abroad. The success of this training is palpable and long-lasting. For example, there were no pediatric urology specialists in Viet Nam prior to 1994. Between 1994 and 2005, IVUmed teams and Vietnamese surgeons jointly performed over five hundred operations. As a result of this training, the local doctors have since independently operated on more than 7,000 pediatric patients, increasing their surgical output by ten-fold. With the mentorship provided by the IVUmed teams, the local experts now train 10-15 in-country physicians every year, a significant achievement in this vitally important surgical field once virtually absent in Viet Nam. The trainees have the opportunity to meaningfully address the global need for high quality pediatric urological care, while honing their skills to become better teachers and mentors.

IVUmed provides a means for trainees to make a meaningful impact on patients and healthcare capacity worldwide. As quantified in a recent survey, 63% of trainees indicated that participating in a surgical

workshop with IVUmed was their first time performing medical work overseas. Approximately 90% of trainees surveyed stated that they returned from their experiences with a changed perspective on global healthcare. Most indicated that their experiences abroad provide another dimension to their training, creating a far greater depth to their overall understanding of urology. In addition, this international experience allowed the trainees to better understand cultural differences and the diverse needs that they may encounter at home. 79% of trainees surveyed expressed their desire to continue international medical service throughout their career.

Affording time off for international training during Pediatric Urology Fellowships allows trainees to be exposed to unique and challenging health care systems around the world. International training challenges fellows to adapt their patient care approach according to the resources on hand in foreign clinical environments, and often offers a wider variety of surgical issues than they would not have otherwise had access to in the United States. International training often instills in fellows a greater appreciation for the valuable role of volunteerism in global patient care and medical training. As stated by one of the trainees who recently worked with IVUmed, “during a selfish time of intense training tempered by chronic fatigue, IVUmed offered me a reprieve, a chance to rekindle some of my passion for medicine.”

*Working abroad allows the trainees to work within the limits of their environment to determine what they truly need, and to eliminate costly “bells and whistles.”*

### For more information

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