Pediatric Urology

Cincinnati Children's

Division Details

Division Data Summary

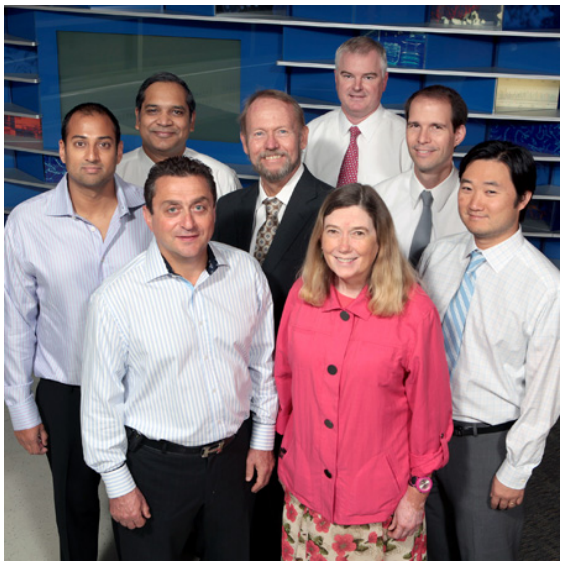
Research and Training Details

Number of Faculty	7
Number of Joint Appointment Faculty	2
Number of Research Fellows	1
Number of Support Personnel	19
Direct Annual Grant Support	$53,040
Direct Annual Industry Support	$35,536
Peer Reviewed Publications	15

Clinical Activities and Training

Number of Clinical Staff	17
Number of Clinical Fellows	4
Number of Other Students	3
Inpatient Encounters	649
Outpatient Encounters	12,422

Division Photo



Left to Right: E Minevich, E Jackson, P Noh, S Alam, C Sheldon, B VanderBrink, P Reddy, W DeFoor

Significant Accomplishments

Clinical Accomplishments

The division ranked fourth in the nation among pediatric urology programs according to this year's *US News and World Report* survey. Our Urogenital Center, providing care for complex genitourinary conditions, has experienced exponential growth in national and international referrals.

Supporting Cincinnati Children's strategic goals for clinical expansion, a second multidisciplinary center, the Center for Disorders of Sex Development (DSD), was established in November 2011. The DSD Center provides world-class care for children with congenital chromosomal, gonadal or anatomical variations of sex development. As part of Cincinnati Children's global initiatives, Shumyle Alam, MD, and Eugene Minevich, MD, traveled to Ecuador; Pramod Reddy, MD, Paul Noh, MD, and Minevich traveled to Israel to perform complex urological surgery.

Other Accomplishments

Division director Pramod Reddy, MD, was honored for his appointment as the first recipient of the Sheldon Wacksman Chair in December 2011. The Division has participated in AILS (Accelerated Improvement Leaders Systems) and is developing care processes and outcomes for three chronic urological conditions: posterior urethral valves (PUV), anorectal malformation (ARM) and neurogenic bladder (NGB). The division's focus on care integration has led the creation of the first-of-its-kind patient registry for patients with PUV.

Research and Fellowship Program

Our faculty leads several significant research projects and serves in a variety of national leadership roles. The basic science lab directed by Pramod Reddy, MD is focused on the relationship between the CNS and the lower urinary tract and how stress can induce changes in bladder function and morphology. Reddy heads a phase 3 clinical trial to evaluate darifenacin as a treatment for neurogenic detrusor overactivity.

William Robert DeFoor Jr., MD, is the principal investigator on a subcontract for the NIH clinical trial, “Randomized intervention for children with vesicoureteral reflux (RIVUR).” DeFoor is evaluating the use of Deflux for VUR patients receiving endoscopic correction.

Paul Noh, MD, is investigating the use of oxybutynin chloride topical gel for the treatment of detrusor overactivity associated with neurological conditions in pediatric patients. DeFoor and Minevich are instituting a randomized controlled trial of patient outcomes comparing low-friction hydrophilic catheters versus standard urethral catheters in children with neuropathic bladder on clean intermittent catheterization.

Elizabeth Jackson, MD, is implementing a study, “Nocturnal Enuresis: Comparison of Buzzer and Voice Alarms on the Rate of Resolution of Bedwetting.”

Division Highlights

Elizabeth Jackson, MD

Dr. Jackson is recruiting patients for her clinical study entitled Nocturnal Enuresis: Comparison of buzzer and voice alarms on the rate of resolution of bedwetting. Bedwetting alarms are the most effective long term treatment for children with monosymptomatic nocturnal enuresis. The specific aim of this research is to compare efficacy in terms of rate and speed of resolution of bedwetting between an alarm that sounds a buzzer and an alarm that plays spoken directions. A secondary aim will be to assess how long parental assistance is needed to help the child respond to each type of alarm.

Pramod Reddy, MD

Dr. Reddy has completed an I2S2 outcomes Project entitled: Improving the assessment and documentation of renal function and chronic kidney disease stage in all patients with posterior urethral valves (PUVs) followed at CCHMC in Nephrology/Urology clinics. Dr. Reddy’s global aim is to improve renal health in children with PUVs. As an outgrowth of Advance Improvement Leadership Sessions (AILS), Dr. Reddy and the EPIC staff are establishing a registry of patients with PUVs in EPIC. Additionally, Dr. Reddy was invited to participate in the Senior Faculty Leadership Program facilitated by the Center of Continuing Professional Education at the Harvard School of Public Health.

Shumyle Alam, MD

In January of 2012, Dr. Alam was an invited speaker at the Urology Conference at Arab Health in Dubai. Dr. Alam present clinical and research information on the management of neurogenic bladder and optimizing chronic renal disease in the urologic child.

Significant Publications

Traxel, E., **W. R. DeFoor Jr.**, E. Minevich, **P. P. Reddy**, S. Alam, D. Reeves, C. Sheldon. **Low incidence of**

urinary tract infections following renal transplantation in children with bladder augmentation. *J Urol.* 186(2): 667-671. 2011.

PURPOSE: Children with end-stage renal disease and bladder dysfunction may require augmentation cystoplasty before kidney transplantation. Previous reports have suggested unacceptable urinary tract infection rates in these immunosuppressed patients. We reviewed our experience in this population. MATERIALS AND METHODS: We retrospectively studied patients undergoing augmentation cystoplasty and subsequent renal transplantation by a single surgeon between 1989 and 2007. This cohort was compared with a control group on clean intermittent catheterization who had undergone transplantation without augmentation. Patient demographics, etiology of renal failure, surgical details, surgical/allograft outcomes and occurrence of urinary tract infection were analyzed. RESULTS: The augmented group included 17 patients with a median age at reconstruction of 6.4 years. Stomach was used in 15 patients and colon in 2. Median time between reconstruction and transplantation was 1.2 years. Median followup after transplantation was 7.7 years. The control group included 17 patients with a median age at transplantation of 10.9 years. Median followup in the controls was 6.1 years. All ureteral reimplantations were antirefluxing. Patients on clean intermittent catheterization were maintained on oral antibiotic suppression and/or gentamicin bladder irrigations. In the augmented group 35 episodes of urinary tract infection were noted, and the number of documented infections per patient-year of followup was 0.22, compared to 32 episodes of urinary tract infection and 0.28 infections per patient-year of followup in the controls. No allograft was lost to infectious complications. CONCLUSIONS: In our series there was no increase in urinary tract infection rate following renal transplantation in patients with augmented bladders compared to controls. This finding may be due to the use of gastric augmentation, antirefluxing reimplantation and gentamicin irrigations.

Noh, P. H.,**W. R. Defoor**, **P. P. Reddy.** **Percutaneous antegrade ureteral stent placement during pediatric robot-assisted laparoscopic pyeloplasty**. *Journal of Endourol.* 25(12): 1847-1851. 2011.

Background and Purpose: Robot-assisted laparoscopic pyeloplasty has become more widely used. Intraoperative placement and confirmation of ureteral stent position can be cumbersome with the robotic arms in place. We present a technique of percutaneous antegrade stent placement that is reliable with minimal morbidity. Patients and Methods: A retrospective cohort study was performed. Patient demographics, radiographic imaging, intraoperative details, and surgical outcomes were abstracted from the medical record. A 14-gauge angiocatheter was placed through the abdominal wall. A ureteral stent was guided over a wire down the dismembered ureter. Stent position was confirmed by retrograde reflux of methylene blue. A urethral catheter was left in place for 12 to 36 hours. Results: Twenty-nine patients (15 male, 14 female) were identified. Average age was 10 years. Average follow-up was 14 months. Fifteen left- and 14 right-sided procedures were performed. Two patients needed retrograde stent placement. Mean time to correctly position the stent was less than 5 minutes. Postoperatively, one patient had a urine leak managed by an indwelling urethral catheter and did not need percutaneous drainage. All stents were removed approximately 4 to 6 weeks postoperatively. One patient had retrograde migration of the stent managed by ureteroscopy at the time of stent retrieval. Conclusions: Antegrade ureteral stent placement through a percutaneous angiocatheter, during robot-assisted laparoscopic pyeloplasty, is a rapid and effective technique. Intraoperative confirmation of stent position can be obtained, using methylene blue bladder distention, without repositioning the patient or undocking the surgical robot.

Reddy, P.P., T. P. Reddy, J. Roig-Francoli, L. Cone, B. Sivan,**W. R. DeFoor**, K. Gaitonde, P. Noh. **The impact of the Alexander Technique on improving posture and surgical ergonomics during minimally invasive surgery: pilot study.** *J Urol.* 186(4 Suppl): 1658-1662. 2011.

PURPOSE: One of the main ergonomic challenges during surgical procedures is surgeon posture. There have been reports of a high number of work related injuries in laparoscopic surgeons. The Alexander technique is a

process of psychophysical reeducation of the body to improve postural balance and coordination, permitting movement with minimal strain and maximum ease. We evaluated the efficacy of the Alexander technique in improving posture and surgical ergonomics during minimally invasive surgery. MATERIALS AND METHODS: We performed a prospective cohort study in which subjects served as their own controls. Informed consent was obtained. Before Alexander technique instruction/intervention subjects underwent assessment of postural coordination and basic laparoscopic skills. All subjects were educated about the Alexander technique and underwent post-instruction/intervention assessment of posture and laparoscopic skills. Subjective and objective data obtained before and after instruction/intervention were tabulated and analyzed for statistical significance. RESULTS: All 7 subjects completed the study. Subjects showed improved ergonomics and improved ability to complete FLS as well as subjective improvement in overall posture. CONCLUSIONS: The Alexander technique training program resulted in a significant improvement in posture. Improved surgical ergonomics, endurance and posture decrease surgical fatigue and the incidence of repetitive stress injuries to laparoscopic surgeons. Further studies of the influence of the Alexander technique on surgical posture, minimally invasive surgery ergonomics and open surgical techniques are warranted to explore and validate the benefits for surgeons.

Cost, N. G., D. G. DaJusta, C. F. Granberg, R. M. Cooksey, C. E. Laborde, J. E. Wickiser, P. C. Gargollo. **Robot-assisted laparoscopic retroperitoneal lymph node dissection in an adolescent population.** *J Endourol* 26(6): 635-640. 2012.

Laparoscopic retroperitoneal lymph node dissection (RPLND) has been shown to be safe and effective in appropriately selected pediatric and adolescent patients with paratesticular rhabdomyosarcoma (RMS) and testicular germ-cell tumors (T-GCT). While the use of robot-assisted laparoscopy has expanded rapidly in many areas, there are very limited reports of its use with RPLND. This article presents two cases of adolescents who were treated using robot-assisted laparoscopic RPLND (R-RPLND)-one with paratesticular RMS (PT-RMS) and one with testicular GCT (T-GCT)-with good outcomes and low morbidity.

Korrect, G. S., E. A. Minevich, B. Sivan. High-grade transitional cell carcinoma of the pediatric bladder. *J Pediatr Urol* 8(3): e36-38.2012.

Transitional cell carcinoma of the bladder is extremely rare in the first decade of life. This article presents the case of a 5-year-old male with gross hematuria found to have high-grade transitional cell carcinoma of the bladder. To the knowledge these authors, this is the first such reported case in this age group.

Division Publications

1. Bergsland KJ, Coe FL, White MD, Erhard MJ, DeFoor WR, Mahan JD, Schwaderer AL, Asplin JR. **Urine risk factors in children with calcium kidney stones and their siblings**. *Kidney Int*. 2012; 81:1140-8.
2. Boyle SC, Kim M, Valerius MT, McMahon AP, Kopan R. **Notch pathway activation can replace the requirement for Wnt4 and Wnt9b in mesenchymal-to-epithelial transition of nephron stem cells**. *Development*. 2011; 138:4245-54.
3. Cost NG, DaJusta DG, Granberg CF, Cooksey RM, Laborde CE, Wickiser JE, Gargollo PC. **Robot-assisted laparoscopic retroperitoneal lymph node dissection in an adolescent population**. *J Endourol*. 2012; 26:635-40.
4. Goebel J, DeFoor WR, Sheldon CA. **Pediatric Renal Transplantation: Perioperative Management**. *Clinician's Manual of Pediatric Nephrology*. Singapore; Hackensack, NJ: World Scientific Pub.; 2011:583-601.
5. Korrect GS, Minevich EA, Sivan B. **High-grade transitional cell carcinoma of the pediatric bladder**. *J Pediatr Urol*. 2012; 8:e36-8.
6. Minevich E, Sheldon CA. **Reconstruction of the Bladder and Bladder Outlet**. *Pediatric Surgery*. Philadelphia: Elsevier Saunders; 2011:1467-1486.

7. Noh PH. **Reconstructive Surgery in Duplex Kidney**. *Pediatric Robotic and Reconstructive Urology*. Chichester, West Sussex: Wiley-Blackwell Publishing; 2012:136-141.
8. Noh PH, Defoor WR, Reddy PP. **Percutaneous antegrade ureteral stent placement during pediatric robot-assisted laparoscopic pyeloplasty**. *Journal of Endourology*. 2011; 25:1847-1851.
9. Podberesky DJ, Weaver NC, Anton CG, Lawal T, Hamrick MC, Alam S, Pena A, Levitt MA. **MRI of acquired posterior urethral diverticulum following surgery for anorectal malformations**. *Pediatr Radiol*. 2011; 41:1139-45.
10. Reddy PP, Reddy TP, Roig-Francoli J, Cone L, Sivan B, DeFoor WR, Gaitonde K, Noh PH. **The impact of the alexander technique on improving posture and surgical ergonomics during minimally invasive surgery: pilot study**. *J Urol*. 2011; 186:1658-62.
11. Richstone L, VanderbBrink BA, Kavoussi LR. **Laparoscopic Retroperitoneal Lymph Node Dissection**. *Hinman's Atlas of Urologic Surgery*. Philadelphia: Elsevier Saunders; 2012.
12. Singh S, Kline-Fath B, Bierbrauer K, Racadio JM, Salisbury S, Macaluso M, Jackson EC, Egelhoff JC. **Comparison of standard, prone and cine MRI in the evaluation of tethered cord**. *Pediatr Radiol*. 2012; 42:685-91.
13. Timm N, Bouvay K, Scheid B, Defoor WR, Jr.. **Evaluation and management of sexually transmitted infections in adolescent males presenting to a pediatric emergency department: is the chief complaint diagnostic?**. *Pediatr Emerg Care*. 2011; 27:1042-4.
14. Traxel E, DeFoor W, Minevich E, Reddy P, Alam S, Reeves D, Sheldon C. **Low incidence of urinary tract infections following renal transplantation in children with bladder augmentation**. *J Urol*. 2011; 186:667-71.
15. VanderBrink BA, Ost MC. **Pediatric Laparoscopic and Robotic-Assisted Laparoscopic Renal Surgery** . *Smith's Textbook of Endourology*. Chichester, West Sussex: Wiley-Blackwell Publishing; 2012:1188-1200.

Faculty, Staff, and Trainees

Faculty Members

Pramod P. Reddy, MD, Professor

Leadership Division Director; Director, Pediatric Urology Fellowship Program

Research Interests Complex genitourinary reconstruction, neurogenic bladder, anorectal malformations, disorders of sex development, renal transplant in the neurogenic bladder, general pediatric urology surgery, prenatal evaluation and fetal care, general pediatric urology surgery, minimally invasive robotic assisted surgery, kidney stones, ESWL, clinical trials; basic science research on relationship between the CNS and the lower urinary tract and how stress can induce changes in bladder function and morphology.

Shumyle Alam, MD, Assistant Professor

Leadership Clinical Director, Urogenital Center

Research Interests Complex genitourinary reconstruction, neurogenic bladder, anorectal malformations, disorders of sex development, renal transplant in the neurogenic bladder, general pediatric urology surgery.

W. Robert DeFoor, Jr, MD, MPH, Associate Professor

Leadership Director of Clinical Research; Co-Director, Pediatric Urology Fellowship

Research Interests Complex urinary reconstruction, clinical outcomes research, clinical trials, urolithiasis, uro-oncology, laparoscopic-assisted and robotic-assisted surgery, vesico-ureteral reflux.

Eugene A. Minevich, MD, Professor

Leadership Director, Stone Program

Research Interests Complex genitourinary reconstruction, microscopic hypospadias, endoscopic treatment of vesico-ureteral reflux, urolithiasis and ESWL.

Paul H. Noh, MD, Assistant Professor

Leadership Director, Minimally Invasive Surgery

Research Interests Minimally invasive laparoscopic surgery including single umbilical incision for intra-abdominal tests, nephrectomy, partial nephrectomy, robotic surgery including oncologic and reconstructive surgery, general pediatric urology surgery, prenatal evaluation and fetal care.

Curtis A. Sheldon, MD, Professor

Leadership Founding Director, Urogenital Center

Research Interests Ethics, Professionalism

Brian A. VanderBrink, MD, Assistant Professor

Research Interests Spina bifida, genitourinary reconstructive surgery, minimally invasive, general pediatric urology surgery, clinical trials.

Joint Appointment Faculty Members

Elizabeth C. Jackson, MD, Associate Professor (Division of Nephrology; Director of Healthy Bladder Clinic)

Research Interests Clinical trials, bladder detrusor activity, urolithiasis and nocturnal enuresis.

Joo-Seop Park, PhD, Assistant Professor (Division of Pediatric Urology)

Research Interests Basic science research on nephron progenitor cells differentiation during organogenesis of the mammalian kidney and bladder; studies transcriptional and epigenetic controls of cis-regulatory modules that act downstream of various signaling pathways.

Clinical Staff Members

- **Denise Ferguson, MSN, CNP**
- **Odile Kennedy, MSN, CNP**
- **Tammy Lingsch, MSN, CNP**
- **BJ Manz, MSN, CNP**
- **Nan Tobias, MSN, CNP**

Trainees

- **Nicholas Cost, MD**, PL-6, MD - Emory University School of Medicine; University of Texas Southwest MC, Dallas, Texas
- **Bezazel Sivan, MD**, PL-5, MD - Ben Gurion University Medical School, Beer Sheva, Israel
- **Eddy Riachy, MD**, PL-4, MD - Saint Joseph University, Beirut, Lebanon;
- **Anis Ansari, MD**, PL-5, MD - Shyam Shah Medical College, Rewa-Madhya Pradesh, India

Division Collaboration

Bariatric Surgery; Nephrology » Thomas Inge, MD and John Asplin, MD

Urinary metabolic evaluations in morbidly obese children.

Nephrology » Prasad Devarajan, MD

Urinary NGAL in Ureteropelvic junction obstruction in children.

Radiology » Brian Coley, MD

Develop a method to tract a patient's radiation exposure from various radiology testing

Oncology; Pediatric Surgery » James Geller, MD and Gregory Tiao, MD

Renal rhabdomyosarcoma

Oncology; Radiology; Pediatric Surgery » Janes Geller, MD, Eric Crotty, MD, and Roshni Dasgupta, MD

Imaging for pediatric renal tumors

Oncology » James Geller, MD

Robotic surgery for pediatric renal tumors

Oncology; Children's Oncology Group (National Organization) » James Geller, MD

Epidemiology and surgical approach to pediatric renal cell tumor

Colorectal Center » Mark Levitt, MD

Cloaca Project and Neurogenic Bladder Project looking at the long term outcomes

Pediatric Sugery » Gregory Tiao, MD

Look at urinary outcomes with (1) kidney transplant for urological conditions and (2) infant posterior urethral valves.

Nephrology » Stuart Goldstein, MD

Revise criteria and categories in NAPRTCS

Grants, Contracts, and Industry Agreements

Grant and Contract Awards			Annual Direct
DEFOOR, W			
Randomized Intervention for Children with Vesico Uretera			
National Institutes of Health(University of Buffalo)			
U01 DK 074063	08/09/10-06/30/13		$53,040
		Current Year Direct	**$53,040**

Industry Contracts		
NOH, P		
Watson Laboratories, Inc.		$35,536
	Current Year Direct Receipts	**$35,536**
	Total	**$88,576**