

ADVANCING ACCESS, CARE AND OUTCOMES FOR UROLOGICAL CONDITIONS

CHILDREN'S MERCY PEDIATRIC UROLOGY

Children with urinary and genital tract diseases have access to full diagnostic and therapeutic services through the urology program at Children's Mercy. The program has earned recognition as one of the top programs in the nation by *U.S. News & World Report*.

ADVANCING CLINICAL CARE

TREATING COMPLEX COLORECTAL CONDITIONS AS A TEAM

The Children's Mercy Comprehensive Colorectal Center (CCC) is equipped to provide the highest level of care for pediatric patients with anorectal malformations and pelvic floor disorders. The care team includes providers who are nationally recognized by *U.S. News & World Report* for excellence, including urological experts. Children who we treat surgically receive the highest level care possible through our ACS-accredited Level 1 pediatric surgery center. Because colorectal conditions can involve so many different systems of the body, our specialists look at each child's case together to come up with a unified approach and individualized treatment.

Urology sees all colorectal patients at least once for evaluation, with long-term follow-up for the majority of patients. Common conditions treated include Hirschsprung Disease, imperforate anus, VATER, VACTERAL, bladder exstrophy, cloaca and all other anorectal malformations. Urology evaluates and treats patients from initial diagnosis at birth through transition into adulthood, providing all genitourinary surgical interventions associated with the above diagnosis, as well as nonsurgical management and support. Primarily, the urological team aims to achieve renal preservation, social continence and prevention of infection.



A TOP-RANKED PROGRAM

One of the top urology programs for children in the nation, according to *U.S. News & World Report*.

BY THE NUMBERS

4 FELLOWSHIP-TRAINED PEDIATRIC UROLOGISTS

6 ADVANCED PRACTICE REGISTERED NURSES

9,289 OUTPATIENT VISITS*

1,658 SURGICAL CASES IN UROLOGY*

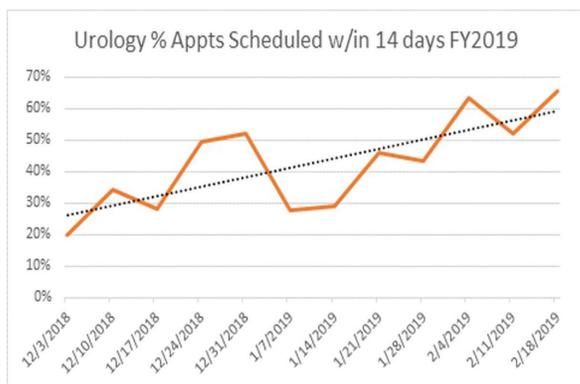
*FY19

REINVENTING NURSING PRACTICE TO IMPROVE CULTURE, PERFORMANCE AND THE PATIENT EXPERIENCE

To improve the work environment, access to care and the overall patient experience, nurse leaders in Urology engaged frontline registered nurses (RNs) and advanced practice nurses (APRNs) in identifying strategies to elevate nursing practice to top of license.

A patient access project was initiated to simplify scheduling, facilitating better patient access across providers, diagnoses and locations. By streamlining the process, RN scheduling responsibilities could transition to the centralized scheduling team, freeing RNs to perform direct patient care activities previously completed by APRNs. This shift in workload adds value and satisfaction to the RN role and enables APRNs to conduct more independent clinics, increasing appointment availability.

As a result, RN turnover rates have decreased from 25.8% to 10.5% in two years. NDNQI RN Survey scores have increased in all PES categories. Patient experience scores for "Seen in a Timely Manner" have seen sustained improvements. Independent APRN clinics have increased by five clinics/month, resulting in reduced time to third-available appointment from 60 days to 35 days. This initiative is currently being replicated in areas across the organization to further advance access.



Since December 2018, the percentage of patients able to be seen in less than 14 days has increased from only 20% to nearly 70%.

PRESSURE INJURY PREVENTION FOR UROLOGY SURGICAL PROCEDURES

Pressure Injuries (PI) are one of the leading causes of harm in health care settings. However, there are gaps in knowledge in relation to PI prevention in surgical patients, particularly in pediatric surgical patients. In the operating room, several factors such as positioning, anesthesia, duration of surgery, and patient co-morbidities can affect PI development.

To address a high incidence of perioperative pressure injuries involving cases of urologic reconstruction, the Urology department at Children's Mercy initiated a

pressure injury prevention protocol for reconstructive procedures. The goal was to improve identification of at-risk patients, perform appropriate interventions related to surgical positioning, and increase staff knowledge and awareness of assessment and prevent preoperative pressure injuries.

Prior to initiation of the protocol, as many as five pressure injuries were noted per quarter. After initiation of the protocol, zero incidents have been reported.

MULTIDISCIPLINARY CLINICS

Our clinics bring the experts in each field together in one location, often seeing a patient simultaneously to provide the best diagnosis and treatment plan. In addition to urology, the experts from the following pediatric specialties are included as needed in each clinic: gastroenterologists, endocrinologists, gynecologists, neurologists, geneticists, psychologists and social workers.

- Children's Mercy is home to one of a very few **comprehensive colorectal centers** in the nation, treating conditions such as Hirschsprung disease and other anorectal and pelvic floor disorders. With an integrated, multidisciplinary team that includes urology, we are equipped to treat the most complex cases.
- The **Center for Integrated Care of Pelvic Dysfunction (CENTIPED)** provides care to children and adolescents with combined bowel and bladder needs, with team members from urology, gastroenterology and psychology.
- The **Differences in Sexual Differentiation Clinic** brings together a team of health care specialists from Genetics, Gynecology, Urology, Psychology, Social Work, Chaplaincy and Endocrinology to provide complete care for young people from birth to 21 years old with congenital adrenal hyperplasia (CAH) and differences of sexual development (DSD).
- The **Spinal Differences Clinic** provides continuity of care for complex medical issues that involve multiple body systems, such as the central nervous system, musculoskeletal system, urinary and intestinal systems. Specifically, for children with spina bifida, urologists address commonly associated conditions - including urinary tract infections, vesico-ureteral reflux, hydronephrosis and incontinence, preventing kidney damage and disease as part of a comprehensive treatment plan.
- Urology regularly consults with the **Fetal Health Center** to provide care to babies with complex medical needs.

RESEARCH-DRIVEN BEST PRACTICES

THE NEED FOR ANTIBIOTIC THERAPY IN ASYMPTOMATIC BACTERIURIA IN CHILDREN WITH NEUROGENIC BLADDER

To evaluate practice patterns and improve the quality of care delivered to patients, a retrospective study explored the treatment of asymptomatic bacteriuria (ASB) in children with neurogenic bladder (NGB). The study reviewed charts of patients who were under 18 years of age and treated between January 2015 and April 2018 with NGB and on clean intermittent catheterization (CIC) – a primary treatment which commonly results in bacterial colonization and ASB. Excluded from the review were:

- patients with fever of 101 degrees Fahrenheit or greater
- gross hematuria
- change in continence pattern
- pain at the time the patient presented to Children’s Mercy with bacteriuria
- patients receiving antimicrobials for any cause prior to visit.

A total of 272 patients were identified based on the criteria, 50.7% of which were female and with a median age of 10. Urinalysis and urine microscopy results were reviewed to examine leukocyte esterase, nitrite and WBC and results were broken out by culture organism type.

Results confirmed a high use of antibiotics for ASB within this patient population at Children’s Mercy; 98% of patients with NGB and ASB received potentially unnecessary treatment. Additionally, findings demonstrate that inappropriate antibiotic treatment contributes to resistant organisms, which supports a need for guidelines and education for treatment.

ADOLESCENT VARICOCELECTOMY: SUCCESS AT WHAT COST?

To evaluate clinical outcome, recurrence, morbidity and cost associated with surgical ligation versus percutaneous embolization of adolescent varicocele, a retrospective study was conducted to review the records of 59 consecutive adolescent males, ages 18 years and younger, between 2006 and 2016 with the clinical diagnosis of varicocele who underwent either surgical ligation or percutaneous embolization. Varicocele grade and testicular volumes determined by scrotal ultrasound were reviewed. Patient demographics, operative time, postoperative complications, recurrence of varicocele, and hospital charges were abstracted.

Mean age of the entire cohort was 14.2 ± 2.1 years, with 51 (86%) patients having undergone surgical ligation. Eight (14%) underwent percutaneous embolization. Of the entire cohort, 46 (78%) patients were offered intervention on the basis of left testicular hypotrophy, whereas the other 13 (22%) were offered intervention for pain symptomology. Median follow-up was 17.5 months (range 1 to 65 months).

Of those who underwent surgery, 2 (4%) patients developed a postoperative hydrocele (1 with subsequent hydrocelectomy) and 6 (12%) patients had recurrence of their varicocele. There were no cases of hydrocele or recurrence of varicocele in patients who underwent percutaneous embolization. Twenty surgical patients had postoperative scrotal ultrasound demonstrating catch-up growth by a reduction in difference in testicular volume from $27.3\% \pm 14.7\%$ (pre-operatively) to $11.2\% \pm 13.6\%$ (post-operatively) ($p < 0.001$). There was significant difference in mean operative time between the groups (surgical ligation 41.3 minutes versus percutaneous embolization 117.9 minutes, $p < 0.001$) and hospital charges for the procedure (surgical ligation \$3,983 versus percutaneous embolization \$18,165, $p < 0.001$).

The study showed that percutaneous embolization has seemingly lower rates of postoperative hydrocele and varicocele recurrence in comparison to surgical ligation, but with three times the exposure to general anesthesia and at four times the price. Given these findings, embolization may be better reserved for failures of surgical repair. Results were limited by a small cohort and uneven distribution between groups, but provide the impetus for a prospective randomized comparison.

CHILDREN’S MERCY RESEARCH INSTITUTE

The Children’s Mercy Research Institute (CMRI) at Children’s Mercy Kansas City is an integrated research environment where no boundaries exist between science and medicine. Here, physicians, scientists, academic colleagues and philanthropic partners are collaborating to change the future for children. CMRI areas of emphasis provide the supportive structure for all research conducted at Children’s Mercy. Research may fall under one or more of these areas and include Genomics, Precision Therapeutics, Population Health and Health Care Innovation. To enhance its research endeavors, a new building, future home to the CMRI, is under construction. The institute has been carefully designed so research and clinical care work as cross-functional teams, aligned together, to find answers to pediatric medicine’s most challenging questions.

UROLOGY TEAM

UROLOGY LEADERSHIP

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UROLOGY FACULTY

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Azadeh Wickham, MSN, RN, FNP-BC

SPECIALTY STAFF

The Urology team extends beyond providers. From registered nurses to social workers and psychologists, Children's Mercy is committed to treating the whole child, physically and emotionally, through a comprehensive, team-based approach.



The Children's Mercy Urology Team (pictured left to right): Pat Murphy, MD (emeritus faculty), Joel F. Koenig, MD, Paul R. Bowlin, MD, Alonso Carrasco, MD, and John M. Gatti, MD



in academic affiliation with



LEARN MORE ABOUT UROLOGY AT CHILDREN'S MERCY

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